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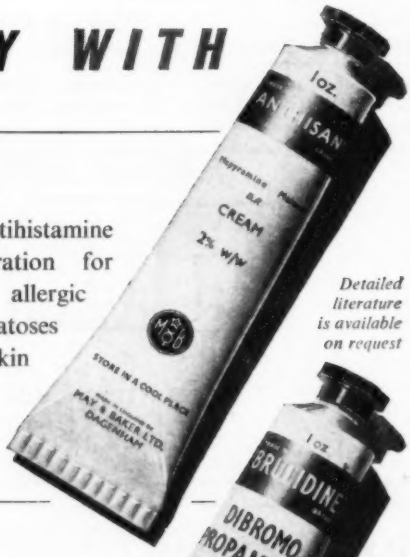

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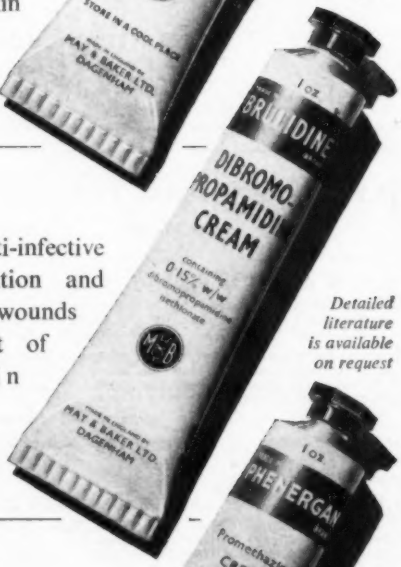

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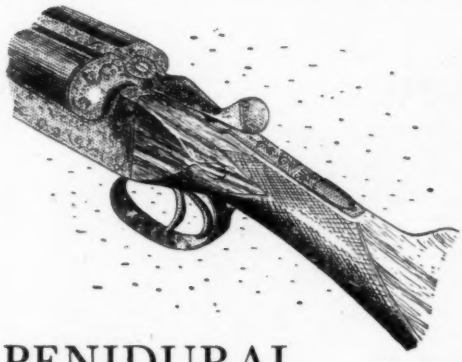

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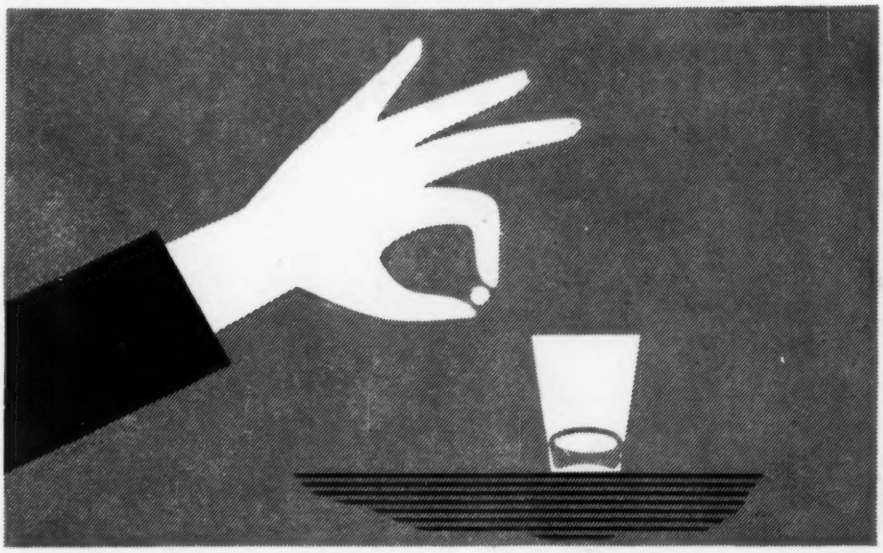

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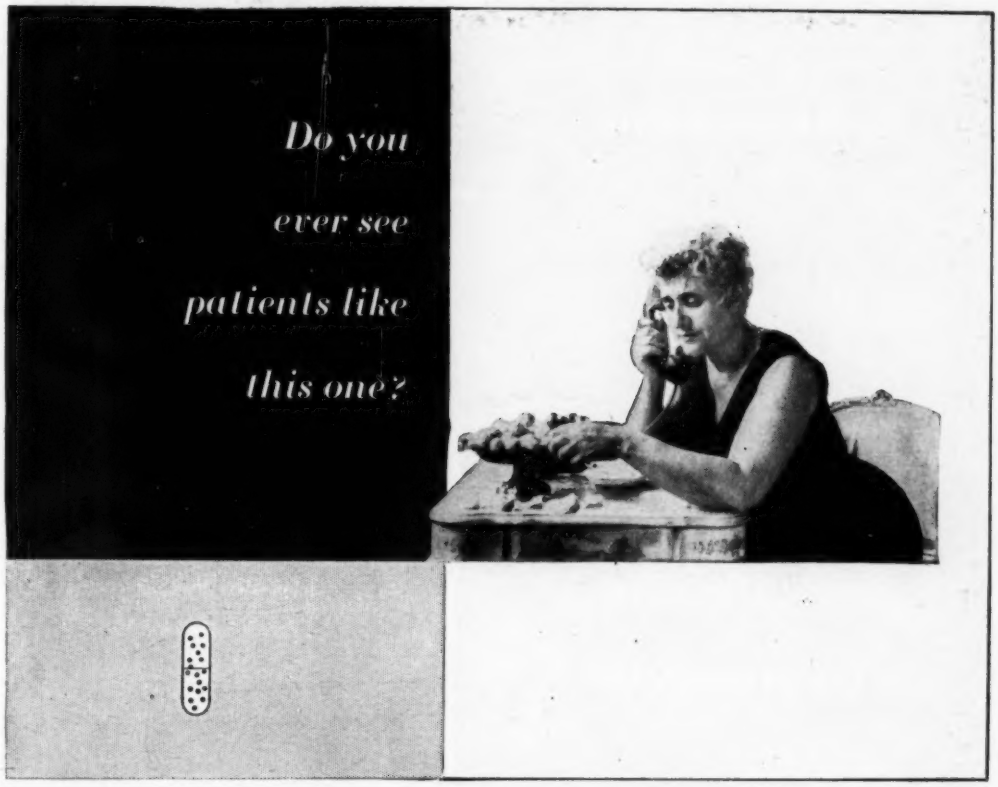

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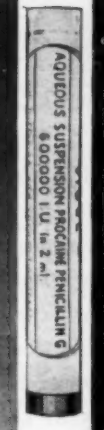

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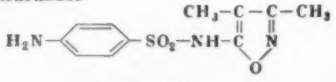

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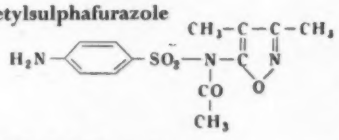

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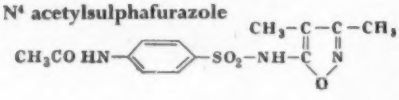

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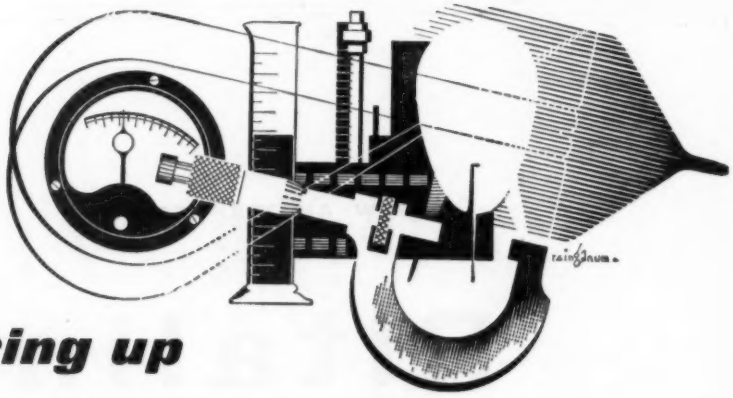

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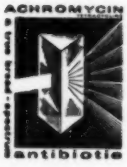

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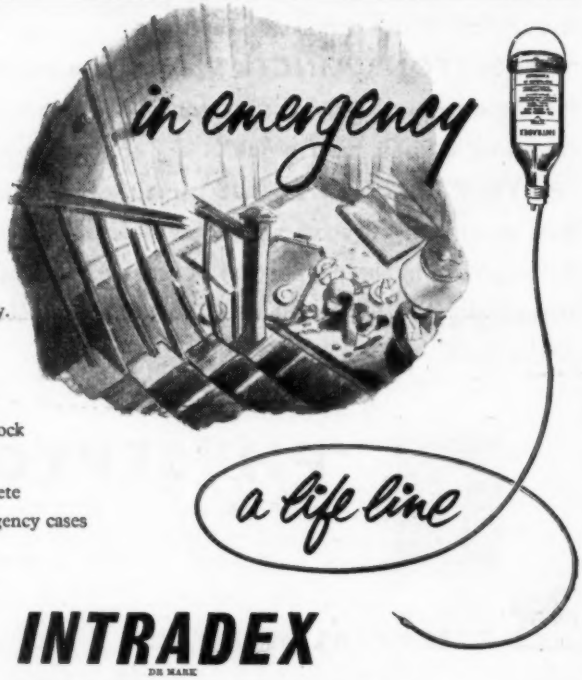

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CLINICAL CANCER RESEARCH*

D. W. SMITHERS
M.D. Camb., F.R.C.P., F.F.R.

PROFESSOR OF RADIOTHERAPY IN THE INSTITUTE OF CANCER RESEARCH: ROYAL CANCER HOSPITAL, AND DIRECTOR OF THE RADIOTHERAPY DEPARTMENT, ROYAL MARSDEN HOSPITAL

RESEARCH is sometimes used in a most practical attempt to find an immediate answer to a specific problem, but basic or fundamental research is more truly the expression of a state of mind. It is an attitude, a curiosity about patterns, relationships and mechanisms, an urge to understand. Its methods are observation, experiment, and contemplation. It takes its inspiration from Nature and not from need; its proper reward is understanding, not practical application. This seems to me to apply to cancer no less than to any other subject—and to some clinical cancer research no less than to non-clinical. I do not say that application is unimportant, merely that it should not be the primary concern of the basic research worker and that when it does become so his work is apt to suffer.

Those of us whose lives are intimately bound up each day with urgent human problems sometimes have great difficulty in remembering that research departments, if they are to flourish, must protect their independence from those of us who wish to put their work to use, and that they must not allow themselves to become too concentrated on the solution of practical problems. The business of making research effective is not primarily theirs and needs separate thought and organisation. The links between basic research and clinical practice in cancer have to be most securely forged if the fundamental research workers are to maintain this desirable state of privileged independence of man's needs, and if their work is to advance the cause of prevention and healing as well as that of science. Some medical research must itself have this same freedom to follow nature—in fact the basic clinical research worker is far too rare amongst us. We could do with many more in the cancer field: cloistered, academic, fundamental, and unhurried, on whom we should make no demands for practical results, but from whom, in time, we may hope for some increase in understanding from whatever unlikely direction their inquiry may have led them.

Today the directors of large cancer research organisations have a terrific task. It is essential that they should have complete control of how the research within their organisations is done, but so many special branches of science are involved that if they are to be knowledgeable enough to be effective they cannot, at the same time, possibly have more than the most superficial contact with the whole world of clinical medicine which is most intimately involved. When limits have to be set to their endeavours it is a great deal to expect that they should always be relied on to decide wisely without some consultation on the best emphasis to be placed on the over-all programme. On the other side directors of clinical cancer research organisations are so rare as to be practically unheard of, and the anatomical specialisation within medicine has become so detailed and so widespread that there are few doctors attempting to survey the whole clinical cancer scene, let alone trying to keep contact with basic research as well. There is, therefore, a sad lack of those with the interest and authority necessary for a proper discussion with the directors of the cancer research organisations to help them decide on the directions in which new effort might be made and from which unprofitable attempts might be withdrawn. There seems to me to be an urgent need for more clinical cancer research workers, of a different class from those with complete academic freedom to follow their ideas, who will concentrate on the neglected task of two-way communication with the purpose of making research effective. They are required to be familiar with the human problem so that the flow of ideas arising from it may reach the fundamental research workers and so that their discoveries may in turn have a channel to the ward. It is of these middle-men that I propose to speak—the links between basic cancer research and practice, the men with an insecure foot in both camps, not always too well regarded by either but without whom freedom in fundamental research may become restricted with its viewpoint narrowed and the patient unlikely to reap the full benefit of the immense effort which is made.

The Duties of the Middle-men

The first duty of these middle-men is to be familiar with their subject, which is an extremely common disease process in man. Sir Thomas Lewis said:

> "When we investigate clinically some disease, or some manifestation of it, we may be seriously handicapped by circumstance; but we are possessed of the certain knowledge that what we study is precisely what we set out to study."

Their second duty is to find their way into research laboratories and staff rooms, to talk, to listen, to attend meetings, and to read review articles. Their purpose here is to feel what is nowadays called the "climate of opinion" and to try to do two things. The first is to feed in ideas gained in clinical practice, and the second to try to see the implications of new knowledge. If they do this they will move amongst experts in every basic science and in every branch of medicine, each expert knowing so much more than they do about his own specialty that they may at times be in danger of feeling inferior instead of necessary. If in some need of reassurance, they may repeat to themselves a few words spoken by Sir Francis Walshe which should give them comfort from both directions. Sir Francis said:

> "It is clear that experiment involves an even higher degree of abstraction than simple observation, for many more facts out of the total presenting are put in the discard, and this is why, perhaps, the experimental method, exclusively pursued, may prove somewhat narrowing to the mind, adverse to a philosophic generality of outlook, and to the free play of ideas ranging over the sum of presenting phenomena."

He also said in that same Harveian Oration:

> "Some generality of understanding is the essence of civilised culture, and is a crying need in medicine and we must seek it earnestly if we are not to decline to the level of craftsmen and technicians."

Their third and main duty is to engage in research on their own account: in the hospital ward—that laboratory nearest to their problems—in their own experimental laboratories, which do not need to be expensive or large, and in the collection, sorting, and analysis of detailed clinical observation, work which does need to be far more elaborately equipped and staffed than it has ever been before. Their task here is to develop the ideas they will pass on to the basic research workers, to test hypotheses they have formed from contact with them, to clarify the problem to be tackled, and to assess the value of what is being done about it. For my own part I would like to see a few outstanding physicians, clinical professors of medicine, engaged in this work, with their own beds and with access to those of their colleagues, and assisted by a sufficiency of clinical pathologists.

A Middle-man's Point of View

Having stressed the need and said where I think the duties lie, I will try to sketch for you my view of the sort of philosophy which one of these middle-men might

* An address to the Plymouth Medical Society on Friday Dec. 2, 1955.

entertain today about this complicated and fascinating problem. The man on the bridge between basic research and clinical practice whom I select for this purpose must inevitably bear a certain resemblance to myself; his views will therefore be not a little confused by the fact that I am normally to be found as busily engaged in the direct clinical application of a specialised technique as most of the others on one side of his bridge and at least as biased and full of foibles as the rest. This pontine figure of my imagination should look impartially and hopefully to either side, but since his own state of mind is necessarily temporary and subject to change, and since, though most parts of it may be sympathetically regarded from one side or the other, the whole is likely to appear curiously misshapen from both, he should not always expect such tolerance in return. It is important that he should have a flexible, sensible, and general view against which he can test the claims that are made and into which he may either fit new knowledge or use it to change his outlook. For the rest of my address I shall be attempting to see the cancer problem and some of the people engaged on it as they might appear today from this precarious viewpoint.

To my selected middle-man, cancer is a human disease process which has only been defined in terms of behaviour. He knows that each doctor decides for himself what number and what degree of several abnormal behaviour patterns he will accept in each particular patient before he attaches the diagnosis. He sees the mistakes that are made from time to time in this assessment, to the pride and profit of quacks on the one hand, and to the dismay and frustration of clinicians on the other. He recognises that growth may be excessive or invasive, or even perhaps metastasising, and still be benign; that a tumour may be a malformation or a neoplasm or neither or both; that the degree of malignancy of undoubted cancers may so vary that one may be far more easily curable than many other diseases and another so catastrophic that the patient disintegrates before our eyes. A tumour may progress through every borderline stage in each one of its behaviour characteristics after another and, if hormone-dependent or conditional, may still retain this property long after dissemination has occurred or lose it at any time during this progression. The process may start in many cells at about the same time: in one localised area, in one organ, or in scattered homologous tissue in different parts of the body. The distribution of cancer throughout the animal kingdom, the rather similar changes which take place in plants, and the involvement at times of almost every tissue in the human body, suggests to him strongly that this behaviour pattern must be something fundamental biologically. The different factors which incite and promote this change in behaviour, the long latent periods which occur, the widely different degrees of growth potential revealed, and the similarity of average age at diagnosis despite a widely different incidence in those exposed and those not exposed to some carcinogenic agents, all seem to favour a balance between growth and growth restraint which weakens sharply with advancing years. The fact that so many different stimuli—both internal and external to the cell—can provoke this change in behaviour and that they are not always, or even usually, necessary for its continuance, seems to indicate that the capacity for unlimited growth which is expressed must reside within the cell itself.

To him, however, it is an assumption to conclude that this capacity must therefore be unusual, peculiar to the cancer cell, or necessarily due to some special, specific change within it. There seems to be little evidence that chemical or structural changes have yet been found in cancer cells which are not present in normal cells in different stages of embryological development and differentiation. Unlimited growth potential holds for unicellular organisms; it has to be shown that it does not do so for the multicellular. A fragment of chick embryo, doubling its original size every forty-eight hours, has, we are told, been growing in culture for nearly as many years. The fundamental behaviour pattern which expresses a capacity for unlimited self-reproduction seems no less than life itself. There does not appear to be any obvious reason, beyond man's wish to find it, why there should be some special growth potential within the cancer cell thought to be evil which is any different from or any more or less mysterious than that already existing in all living things and thought to be good. He suspects the introduction of a value judgment into an exercise devoted to the understanding of a phenomenon of Nature.

The emergence of new qualities from increasing complexity of structure is another fundamental biological property which seems to him to be relevant. New qualities not present in the various parts which go to make some new whole nevertheless arise from their combination. The nuclear physicist's world of fundamental particles is free of quality, while the sphere of the biologist is packed full of them in glorious and confusing abundance. An electron is not hard or red or beautiful but, with other particles equally lacking in these qualities, goes to make structures which may appear to be all three. Similarly, the adding together of cells in a pattern to make an organism produces new qualities which are not inherent in the cells themselves. One of the most necessary qualities for survival which must arise is organisation. As evolution, by producing increasing complexity, has allowed the development of more and more qualities, so it has demanded and selected better and better organisation.

Each cell in the human body, being produced by mitosis as a direct descendant of the original fertilised ovum, carries within it all the inherited potentialities to which the individual is heir. These cells do not remain alike, however; most of them by differentiation become type-specific, giving up some of their inherited potentialities for expression in growth and form while acquiring specialisation in function.

The processes of asexual reproduction, of regeneration and wound healing, and of neoplasia have much in common. Some dedifferentiation followed by cell immigration and an increase in mitosis are usual. Dedifferentiation is a necessary preliminary to regeneration and, even in tissue-culture, cells normally dedifferentiate to some extent before they begin to divide. With controlled regeneration, mitotic-rate and degree of differentiation are inversely related—that is, mitotic-rate decreases as differentiation increases—the process being organised; with tumour formation, mitosis is directly related to the degree of dedifferentiation first achieved, but it tends to be maintained at this rate since differentiation fails to return again, the process being disorganised.

It is this failure of organisation which appears to be the fundamental factor in neoplasia, distinguishing it from agamic reproduction and regeneration. Multifocal origin, variation in degree of change in several behaviour characteristics, progression in those changes, and conditional growth, all seem to be more easily understandable in terms of progressive relaxation of different controls and of cell reversion by varying steps of dedifferentiation to the reassertion of an inherent independence and individuality. The multiplicity of causes of relaxation of control and the continuance of the new behaviour pattern, even when inciting factors have ceased to operate, also seem easier to accept on this basis. To this middle-man, any special intracellular evil, be it mutation, virus, special disorder of nucleic-acid metabolism, or any other unnatural agent which increases cellular activity or damages its controlling

mechanisms, may at times be partly responsible for disorganised growth. The long time that many of the inciting factors take to act, the fact that promoting factors may shorten this time (one of the two perhaps by weakening local control) and that the shortest latent periods are found with viruses—the only suspects which directly introduce a new source of self-reproducing protein into the cell—all seem to him to fit quite reasonably into the picture. Whether the control is overcome from within the cell or from without, by increased reproductive activity or by relaxation of those influences which hold its reproductive urge at bay, or through some combination of the two, the result in terms of changed behaviour pattern or of the cancer process is likely to be the same. No special intracellular evil seems necessary to explain this process, though several different ones may each play their part at times; when such intracellular changes and weakening of extracellular controls occur together they are likely to be more effective than either is alone. This view limits but does not deny the findings of research workers who have adhered to the virus theory, the mutation theory, or other intracellular views; indeed, it seems to make possible the reconciliation of much of their work which appeared to be in conflict.

Perhaps then, thinks this man of ours upon his bridge, the idea of a special evil always present within every cancer cell, so diligently sought on the one side and so relentlessly pursued on the other, may be a myth. Since belief in its existence has dominated cancer thought for so long without much profit to the patient he wonders what would happen if more people seriously considered once again the possibility that there may be substance in the hypothesis that the cancer cell is basically normal and that what goes wrong is essentially due to interference with organisation. It is organisation which appears to be the unstable marvel of human existence——not disorganisation, which is merely its inevitable accompaniment. A similar permissive view of cancer has been held by many, but there would seem to be more reason for holding it today than ever before. Sir William Savory, in the third Bradshaw Lecture in 1884, said:

> "Before we shall ever be able to answer the question, why or how do tumours form? it seems to me we must be able to solve the problem of normal growth and development and to answer the question why or how it is that these continue up to a certain point and then suddenly cease."

The great questions of orderly development and maintenance are better understood than they were then but still seem no less fundamental to the problems of disorderly development and decay. The wonder is not that we should be faced with disorganised growth or cancer, but that organised growth should occur at all and that disorganisation should often be so delayed that many people are preserved long after they have ceased to be biologically useful.

In multicellular organisms with sexual reproduction, only those cells which achieve physiological isolation after fertilisation but before differentiation and which are situated in a favourable environment are able to produce whole adult organisms whether as twins or other multiples. Those which become isolated after some differentiation has occurred, though no longer both totipotential and suitably placed, may still be pleuripotential and able to establish some imperfect organisation of their own in their attempt to fulfil their inheritance. If already specialised and type-specific they may, when isolated and dedifferentiated, produce a mass of primitive cells only faintly resembling their tissue of origin, being more like the cells from which that tissue was derived. Undifferentiated tumours arising in many different tissues are notoriously alike. The only cells which never seem to escape from control are those fixed post-mitotic cells which have differentiated away their whole inheritance, leaving themselves no other possibility of self-expression—one example of which is to be found in the lens of the eye.

Seen in this light, cancer appears as a name applied loosely to the most disorganised end of an ill-defined group of disorders of growth which are due to an inevitable breakdown of some part of that complicated organisation of the body which is able to build it up and to maintain it for a while as a functioning whole. The cancer cell is then seen as a normal cell which, through physiological isolation, has partially escaped from the body's control mechanisms, undergone some dedifferentiation, and is trying under more or less difficult circumstances to express its natural potentialities. The manifestations of cancer depend on the one hand on the degree to which control is overcome, the amount of dedifferentiation achieved, and the possibilities for developmental expression remaining to the cells affected, and on the other on the sites at which loss of control has occurred and their extent, the favourability of the environment in these regions for growth, the distribution throughout the body of the cells affected, and the opportunities for dissemination. The causes of cancer appear as any of those many conditions which lead to the physiological isolation of cells from their fellows in any complicated organism. These multiple causes are seen to be in two main groups: those raising cell activity above that of its control and those lowering the controls. The first group contains most of the irritant, inciting, carcinogenic factors, all those injuries which demand repeated attempts at regeneration, recurrent local hormone stimulation, and any of the intracellular changes which may increase cellular growth potential. The second contains the poorly understood process of ageing, those nervous and metabolic gradients which largely determine and maintain our growth and form, perhaps some of the cancer-promoting agents which may affect these local control mechanisms, and the general hormone system of diffusable control of homologous tissues and of tissues related in some common function throughout the body.

"The cure of cancer" becomes a meaningless phrase while the cure of individual patients with cancers at special sites has long been an established fact. The future is seen to lie with more efficient prevention or postponement of tissue disorganisation, with better removal or destruction of some disorganised tissues, and with renewed attempts at re-establishment of control, knowing that these may all be successful in individual tissues of individual patients but not in any generality. A final, complete solution of this problem is seen to be impossible, since it is part of the nature of complicated organisms that they cannot maintain their organisation indefinitely. Only an isolated unicellular organism in a boundless, favourable environment is immortal and eternally expressing its inherent ability for endless self-reproduction. Evolution is not compatible with immortality; it requires complexity and organisation for expression and death for progress.

Fundamental Cancer Research

Having considered his point of view, the middle-man may then look towards the basic research workers. Individually they seem much like scientists in any field, but collectively they appear to differ from most other groups in that their work is not centred around a single basic discipline but around an ill-defined disease process of which most of them have no first-hand knowledge in the human patient at all. They are clearly not inhibited into inaction by a long acquaintance with the march of this illusive disease; they have been trained in their respective scientific fields to expect to be able to find answers to most questions if they work long and hard enough, and for the most part they seem eager and

confident. They are well aware of the importance of asking the right questions if they are to expect reasonable answers, and in their own fields are unlikely to be caught in this old trap for long. In the wider, unfamiliar sphere of cancer to which they bring their special knowledge and skills, however, they too often appear to accept the basic questions put without the same critical inquiry. It may be that the worthy, emotional, but unscientific appeal of becoming a public benefactor, or at least of sharing in such benefaction, attracted some of them from the start, so that they entered on their work with an element of prejudgment on questions of discoverable cause and cure which prevented them at the start from stopping to examine these fundamental propositions too closely. They are entitled to study whatever aspect of the subject they may choose to follow—this is the privilege of their calling—but much of what they study does not seem to bear much resemblance to what we hoped they had set out to study. There are many of them who have become so fundamental that they appear to be looking for a cause of something which seems to be life and for a cure of something which seems to be the second law of thermodynamics.

The vast effort which he sees on this side of him is, under the guise of cancer research, mostly directed towards unravelling the basic mysteries of life and living. It could hardly have a more worthy object; it demands our increased support. That so much basic biological work should be financed through its cancer relationship may possibly be a mistake, however, since this may have tied it too closely to the demand for an answer to a specific problem which has not even been properly set. Cancer research achievements have been great; they are only underrated because they have supplied no simple solutions to the questions of cause and cure of the disease process to which they are officially dedicated. Judged, as they should be, on their own merits, they are seen to have made important contributions to an immense range of scientific inquiry which is in itself a fascinating story. The twin compulsions of an emotional desire to rid mankind of a killing disease and the constant demand for answers from those who provide the money do seem, however, to have had some ill effect on cancer research. A few workers have rashly abandoned their privileged seclusion at times to announce in public that they are on the trail and that a capture may shortly be expected. The almost hysterical note to be heard in some demands for cancer-research expansion, carrying an implied threat that if they are not met the public cannot expect the solution in a reasonable time, has not always been confined to the administrators. This unhealthy and unscientific atmosphere for the quiet pursuit of fundamental knowledge may not be widespread but there is enough of it to be clearly seen. The middle-man may well feel that another look at the proposition that there is no single simple solution, no specific intracellular evil, and no universal cure for them to discover might blow this mist away. What he wants from these research workers is knowledge about the fundamentals of life and living, of biological organisation and disorganisation, and an understanding of growth, development, and decay. They may take their time; they have all the time there is. Each new discovery is a welcome gain in knowledge. They should be content with this, their proper heritage in cancer research as in other fields; the responsibility for the application of their work is not really theirs. If they feel an obligation to produce results which both please the public and advance the cause of science, the middle-man wonders why they do not more often help to put a few extra people on his bridge.

Clinical Cancer Work

To the other side of the bridge as he looks towards the clinical cancer workers, he sees quite another scene. Here is no group diverse in training and devoted to a single aim, but the whole of medicine. Doctors with much the same basic training in fact but of whom few are primarily engaged in cancer work though most of them have regular and direct contact with it. It is perhaps surprising how few doctors are deeply and daily concerned with a large range of cancer patients. Those surgeons whose interests have centred on one part of the body, and who have acquired by long experience special skill in dealing with malignant disease at this site, are primarily concerned with the advance of their specialty and have not often paid much attention to more general cancer problems. This trend has been of the greatest value in diagnosis, in studying the natural history of the disease, and in local treatment, but, as a result, it has been left to comparatively few surgeons to take an active interest in the whole wide field.

The situation is temporarily rather different for the radiotherapists. They see more patients with a far greater variety of tumours than any of their colleagues, and a bigger proportion of those they see have advanced disease. Specialisation is now developing within the larger radiotherapy departments, for the very same good reasons which led to specialisation in surgery in the past. Coöperation in special clinics between surgeons and radiotherapists with similar interests has greatly improved the quality of the treatment given but emphasises still further the need for clinicians with a wider research interest in this whole process of disordered growth.

Our middle-man recognises that it does not seem very important to some people that physicians and surgeons concerned with cancer should have any very profound knowledge of this disease process. The steady fall in the incidence of mouth cancer which has followed better dental care and a decline in pipe-smoking, the dramatic change in diagnosis of lung cancer and the improvement in results of treatment of testicular tumours, are random examples of advances which have not been dependent on any very fundamental understanding of growth and organisation. Nevertheless he feels that a change of outlook on this great medical and social problem by doctors might have important consequences.

One thousand eight hundred years ago Galen classified tumours as being according to nature, exceeding nature, and contrary to nature, and a better division of this fluctuation in growth and control, if nature in this context means organisation, has not since been made. One hundred and eighty years ago Percivall Pott described occupational cancer, carcinogenesis, the curability of localised tumours, the importance of factors outside the tumour, and the disappointments of palliative treatment. He wrote:

> "The disease, in these people, seems to derive its origin from a lodgment of soot in the rugæ of the scrotum, and at first not to be a disease of the habit. In other cases of a cancerous nature, in which the habit is too frequently concerned, we have not often so fair a prospect of success by the removal of the distempered part; and are obliged to be content with means, which I wish I could say were truly palliative."

Although the carcinogenic hydrocarbons have since been discovered and an immense amount of work has been done on relative potencies of tumour inciting and promoting agents, there have only recently been signs of a real advance in understanding. The simple view that the whole trouble lies in a specific evil within the cell resulting in its autonomy, which has become so widespread, threw the emphasis away from medicine and on to the chemist and the cytologist. The result has been that ideas no longer flow as easily as they should from clinical to basic research interests. Too many research workers feel that the clinician has nothing more of interest to say since he knows little of intracellular mechanisms, and too many clinicians feel that

having posed their question they can only go on doing their best until some magic answer arrives. It seems that this is a situation which needs breaking up, and that nothing is so likely to do it as to persuade doctors to take a new and controversial view of the basic assumptions they have made.

The effects on physicians of holding this common, simple, and perhaps unfounded view have been many. One tendency has been that whenever they get into difficulties with classification they are apt to adjust their definition. So wedded are they to fatality that a patient who lives, especially if treated by a method they do not themselves practise, is readily accepted as having had some other disease until he dies; but then cancer is still likely to be written on his death certificate however long he may have been symptom-free. When to this attitude is added a knowledge of the overriding importance of the nature of the tumour to any result which can be obtained by any treatment, a hopeless view of excellent work may further depress enthusiasm. Eagerness and confidence too easily pass to the thoughtless and the quacks. To many, however, a growing knowledge of the variety of behaviour exhibited by tumours under different circumstances is bringing healthy doubt as to the validity of the old simple thesis, while the obvious advances in diagnosis, and in surgery and radiotherapy, bring new enthusiasm and hope. The growing interest in organisation and control that has followed the demonstration that the whole course of the disease can be influenced by alteration in hormone balance is adding impetus to this changing conception. The growing recognition of the importance of biological predeterminism in human cancer, whereby the stage is set for the behaviour pattern which is to follow by the degree of dedifferentiation and the mitotic-rate established, is helping in the better selection of treatment method and leading to a sounder understanding both of what is possible and of what has really been achieved. The slow penetration of this view through the general body of medicine seems to be due chiefly to the fact that so few people are primarily concerned, and to the combination of fatalistic and miraculous frames of mind which have flourished amongst doctors far too long. What the middle-man wants from clinicians are ideas born of long experience, minds receptive to implications derived from basic research, and an unbiased attitude which makes all possible forms of aid available to every patient according to his need and not according to the skills of the first specialist he sees.

As the man on the bridge looks into the future he wonders if any real appreciation of the cancer problem as a natural phenomenon, stripped of shame, to be accepted, coped with, but never conquered, will come easily. It may well be the general public that is most ready to accept it and to find in it relief from fear. The medical effort may become more firmly concentrated on prevention and postponement of disorganisation. The initiative may pass into their hands once more so that they see this problem again as primarily their own job and not as somebody else's, as a job not really any more difficult because it can never be finally disposed of, one of great importance in medicine and very well worth doing. So much of value is already being done; its worth is underestimated only because it does not seem to provide a simple answer in terms of survival to all the impossible questions put. A doctor's job is to continue to learn, to comfort, encourage, relieve, and to cure when he can; it is no part of his business to become a mere disinterested spectator waiting for a miracle to occur against the whole force of Nature. The cancer problem is ours, and we must see to it that more people actively engage in the clinical research work so necessary if the sensible and possible advances are to flow from the application of new knowledge.

DILATAL IN THE TREATMENT OF INTERMITTENT CLAUDICATION IN THE CALF MUSCLES

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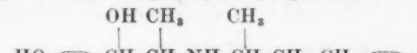
'DILATAL' is a recently introduced drug which is claimed to increase muscle circulation. It was synthesised by Kulz and Schneider (1950) from an adrenaline-like basal substance, parahydroxy ephedrine, to which by substitution a lengthy side-chain had been added to give phenyl-iso-butyl-nor-parahydroxy ephedrine:



It is known that adrenaline given by continuous infusion intravenously to man increases the resting muscle blood-flow (Allen et al. 1946). Kulz and Schneider were looking for a substance which would have this effect without the side-effects of adrenaline and would be active when given by mouth.

Wiemers (1951) showed that dilatal 0·1 mg. per kg. of body-weight given intravenously to anæsthetised dogs and cats lowered the blood-pressure and moderately raised the pulse and respiration rates. The coronary circulation was increased, but there was only a slight change in cardiac output. Plethysmography of the hind limbs of dogs showed an increase in blood-flow of 200–300%, which lasted for 10–15 minutes. The vasodilator effect was shown to be greater in the muscle vessels than in the skin vessels.

If such an effect could be paralleled in man, dilatal might be of value in treating those forms of peripheral vascular disease affecting muscle blood-flow and associated with intermittent claudication.

Dilatal has been extensively used clinically in Germany for many conditions, but few of the trials reported included a critical examination of its effect on muscle blood-flow. Ostwald (1950) states that "vigorous stimulation of muscle circulation was observed" but gives no figures. Hensel et al. (1955), in America, using the calorimetersende to measure muscle blood-flow, state that in 8 of 10 healthy persons the blood-flow increased up to 250% of the resting value, and the increase lasted for 50 minutes when dilatal was infused intravenously for 10 minutes. In England Riddell et al. (1954) studied the effect of dilatal 5 mg. per kg. of body-weight given by mouth to healthy adults and noted, among other changes, a transient increase in flow, measured by plethysmography in the calf and foot, to twice its normal resting value for about 10 minutes and a slightly greater increase in the blood-flow of the hand. From these observations they concluded that the main effect of dilatal was on the skin vessels rather than the muscle vessels. It is doubtful whether their results are statistically significant.

The published evidence does not provide a satisfactory answer to the questions whether muscle blood-flow in man is enhanced to any significant extent by dilatal or whether patients with intermittent claudication can benefit from it. It was therefore decided to submit it to a trial by clinical experiment.

Clinical Trial

After consultation with the makers it was decided to give a dose of 2·5 mg. (one tablet) every 2 hours (preferably after meals) during the day, starting at 8 A.M. and finishing at 6 P.M. A course of tablets lasting 8–9 weeks was given.

52 patients were collected from the hospital outpatient department. The criteria used in their selection was that

they had peripheral vascular disease and that their presenting symptom was intermittent claudication. Since dilatal stimulates gastric secretion, patients with peptic ulcers were excluded; and, as the makers suggest that it is unwise to give dilatal to patients with angina or with hyperthyroidism, these too were excluded. Instead of using a random-distribution table to select those who should have the active drug and those who should have inactive placebo tablets, it was decided, in consultation with a statistician, first to divide the patients into separate groups according to the nature of any previous treatment. Three groups according to previous treatment were required:

(1) Those patients who had had no previous treatment for their intermittent claudication.
(2) Those who had been given tolazoline hydrochloride ('Priscol').
(3) Those who had been treated by sympathectomy.

Each member in each group was then paired off with a patient of similar age in the same group. One member of each pair was given the active drug and the other the placebo. The patients were unaware of the activity of the preparation with which they were supplied. 2 of the patients taking the placebo tablets had to be dropped from the trial because of illnesses unrelated to their peripheral vascular disease. Thus 50 patients completed the trial, 26 of them taking dilatal and 24 acting as controls. Various tests were applied to individual legs. Since 1 of the patients taking dilatal was an amputee, the reported results refer to 51 legs in the trial group and 48 legs in the controls.

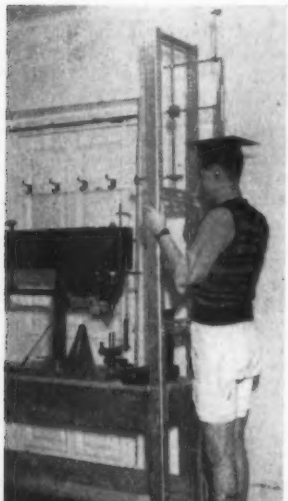


Fig. 1—Patient ready to perform exercise test.

Each patient made two visits to hospital for the purpose of this trial. On the first visit, after being subjected to the various tests described below, the patient was given a tablet of the drug or of the placebo according to whether he was selected for the trial or for the control series, and was observed for half an hour. In this way it was possible to ensure that no patient who was going to take dilatal was hypersensitive to it. In fact, none of the patients showed hypersensitivity to dilatal. The patients were given a supply of tablets to last 9 weeks, together with instructions for taking them. At some time between the 8th and 9th week the patient made his second visit to hospital, where he was subjected to the various tests for a second time and asked to state whether in his opinion the course of tablets had made him better, not affected him, or made him worse. If in the patient's opinion he was better he was asked to estimate the increase in his walking distance.

Acute Clinical Experiments

In 12 patients the immediate effect of dilatal on the blood-flow in the calf muscles at rest was observed. The patient rested supine on a couch. At the end of about half an hour, when a basal rate of blood-flow in both legs had been established, dilatal was given, and the subsequent calf-muscle blood-flow rates were observed every 15 minutes for 2 hours. In these tests different doses of dilatal were used; 6 patients received 2·5 mg. by mouth, 3 patients 5 mg. by mouth, and 3 patients 5 mg. intramuscularly.

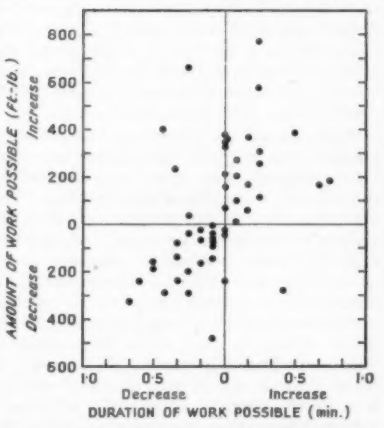


Fig. 2—Change in amount and duration of work possible by each leg separately after course of dilatal.

Experimental Detail

Muscle blood-flow measurements were made with a mercury-in-rubber strain-gauge type of plethysmograph similar to that described by Whitney (1953). This was applied to the calf, and the observed flows (calculated as ml. per 100 g. per min.) assumed to represent muscle blood-flow (Grant and Pearson 1938). Venous occlusion was secured by inflation of 7-in.-wide rubber cuffs incorporated in the legs of a specially made pair of "shorts."

The exercise test was made both before and after the 8-week course of either the drug or the placebo. On arrival at the clinical laboratory the patient was weighed and prepared for the test by fitting on him the necessary pieces of apparatus. A rest of an hour was allowed, during which the patient sat at ease on a chair. He next stood up and steadied himself by holding on to the two vertical uprights seen in fig. 1. His left leg was tested first. As soon as a steady resting blood-flow could be observed, the patient was asked to lift the leg not under test clear of the ground by flexing the knee on that side, and then to raise his body up on to the toes of the side being investigated and down again in time with a metronome (each cycle being timed to last 2 sec.). Care was taken that the patient did not assist himself by using his arms. He continued to go up and down on his toes in time with the metronome until either the pain of intermittent claudication became so severe that he could do no more or until he had exercised for 2 minutes. Immediately the period of exercise stopped, the patient stood still with both feet on the ground. The blood-flow was measured from immediately after the exercise until reactive hyperæmia had passed. After a rest of 5 minutes the right leg was tested in a similar way.

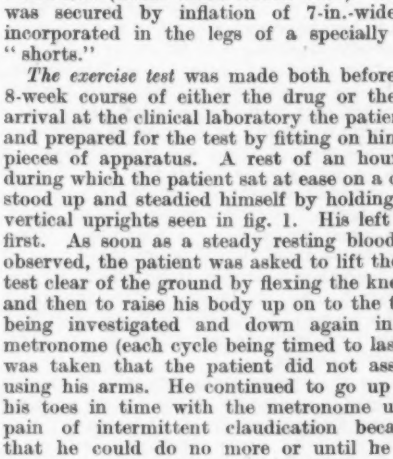


Fig. 3—Change in amount and duration of work possible by each leg separately after course of placebo.

The work done during the exercise was calculated in the following way. The patient did the exercise of raising himself up and down on his toes standing with a light board resting on his head. This board was arranged so that it was pushed vertically up by the patient's head every time he raised himself on his toes. The board followed the downward movement of the patient's head as he lowered himself. The movements of the board were recorded on a kymograph smoked paper. This provided a permanent record of the height to which the patient raised himself each time he went up on his toes. By multiplying the patient's weight (in lb.) by the total of all the individual heights to which he raised himself (in ft.) the total work done can be calculated (ft.-lb.).

TABLE I—PATIENT'S OWN ESTIMATE OF IMPROVEMENT AFTER TREATMENT

Improvement in walking distance (yards)	Patients taking dilatal	Patients taking placebo
> 300	7	2
151–300	3	1
0–150	8	8
I.S.Q.	8	12
−0–150	0	1
Total	26	24

$t = 2{\cdot}71$. $P = <0{\cdot}01$.

Results of Clinical Trial

Patient's Estimate of Improvement after Treatment

Table I shows that, of those patients who felt they had derived some benefit from the course of tablets, more came from the group who had been on dilatal than from the group who had been on the placebo. A statistical analysis based on the patient's estimate of his increased walking distance after his course of tablets showed a significant improvement in those who had taken dilatal compared with those who had been given the placebo ($t = 2{\cdot}71$, $P < 0{\cdot}01$).

Measured Improvement Following Treatment

(1) The amount of work possible (ft.-lb.).
(2) The duration of work possible (min.).

In neither of these factors did the patients who had dilatal for 8 weeks improve to such an extent as to make the results significantly different from those of the patients who received placebo tablets. When the two factors are plotted as a scattergram—one for those patients who received dilatal and one for those patients who received placebo tablets—there is a remarkable similarity in the distribution of the points (figs. 2 and 3).

(3) The rate of doing work (ft.-lb. per min.).
(4) The resting blood-flow (ml. per 100 g. per min.).
(5) The greatest post-exercise blood-flow (ml. per 100 g. per min.).

There was no significant difference between the results obtained after treatment by the patients on dilatal and those on placebo tablets either in the improvement of the rate of doing work ($t = 0{\cdot}66$, $P > 0{\cdot}5$), improvement of resting blood-flow ($t = 0{\cdot}95$, $P > 0{\cdot}3$), or improvement in greatest post-exercise blood-flow ($t = 0{\cdot}33$, $P > 0{\cdot}9$).

(6) Duration of post-exercise hyperæmia.

If dilatal produces a more efficient circulation in the calf muscles, it might be expected that the post-exercise hyperæmia would not last so long in the patients on dilatal as in those receiving placebo tablets. In fact, there was no significant statistical evidence to indicate that dilatal had materially affected this factor ($t = 0{\cdot}21$, $P = > 0{\cdot}8$).

TABLE II—INFLUENCE OF PREVIOUS TREATMENT
Patient's own estimate of improvement

Previous treatment	Patients taking dilatal		Patients taking placebo	
	Total	Improved	Total	Improved
None	5	5	4	2
Sympathectomy	14	10	13	5
Tolazoline	7	3	7	4

TABLE III—INFLUENCE OF PREVIOUS TREATMENT
(Number of legs showing improvement (amount of work possible) after treatment.

Previous treatment	Patients taking dilatal		Patients taking placebo	
	Total	Improved	Total	Improved
None	9	6	8	2
Sympathectomy	28	14	26	18
Tolazoline	14	6	14	7

(7) The influence of the previous treatment.

When the results are examined from the point of view of the patients' treatment previous to the trial (tables II and III), it is seen that the best results with dilatal were obtained in those patients who had received no previous treatment. The patients who had been treated by sympathectomy benefited more than those who had received a previous course of tolazoline. No statistical analysis of these results has been attempted, because the number of individuals in each group is so small.

TABLE IV—EFFECT OF DILATAL ON RESTING BLOOD-FLOW OF RIGHT AND LEFT CALVES OF PATIENTS WITH INTERMITTENT CLAUDICATION

Case no.	Resting blood-flow before dilatal (ml. per 100 g. per min.)	Dose of dilatal (mg.)	Peak resting blood-flow after dilatal (ml. per 100 g. per min.)	Increase (%)	Duration of blood-flow above pre-dilatal level (min.)
1	R 0·6	2·5 (oral)	R 2·8	350	50
	L 1·0		L 1·7	70	15
2	R 1·4	,,	R 1·1	0	0
	L 1·2		L 1·3	8	0
3	R 3·7	,,	R 3·7	0	0
	L 2·7		L 2·7	0	0
4	R 0·8	,,	R 1·1	40	30
	L 2·4		L 6·6	170	50
5	R 0·5	,,	R 0·5	0	0
	L 1·7		L 1·7	0	0
6	R 0·8	,,	R 1·2	50	30
	L 1·1		L 1·8	60	20
7	R 0·6	5 (oral)	R 0·8	30	60
	L 0·8		L 1·4	70	40
8	R 2·3	,,	R 1·8	0	0
	L 1·2		L 0·9	0	0
9	R 0·6	,,	R 0·6	0	0
	L 6·9		L 5·6	0	0
10	R 0·7	5 (I.M.)	R 0·7	0	0
	L 1·0		L 0·8	0	0
11	R 0·9	,,	R 0·5	0	0
	L 1·2		L 2·1	75	25
12	R 2·0	,,	R 1·6	0	0
	L 1·2		L 1·1	0	0

Results of Acute Experiments

Some patients showed a transient improvement in resting blood-flow when given dilatal. The peak improvement in one case was 350%. Many patients, however, showed no increase in blood-flow after a course of dilatal (table IV).

Discussion

Perhaps one of the most interesting points brought out by this trial is the spontaneous improvement of some patients on the placebo tablets. Figs. 2 and 3 show that 22 of 48 (45%) of the legs of the patients receiving placebo tablets were improved at the end of their course in that the patients were able to do more work in the same time or for a longer time, whereas 22 of 51 (43%) of the legs of patients taking dilatal were improved. This observation emphasises the importance of having a control series of patients when clinically testing drugs of this type in a condition such as intermittent claudica-

tion, which may show spontaneous remission or changes in severity from day to day.

The fact that the patients on dilatal estimated that they had improved in the distance that they could walk to an extent which was significantly better than the improvement claimed by the controls, whereas our tests of exercise tolerance did not show any such statistically significant difference between the two groups, led to a critical assessment of the tests to find if some salient point was being missed. A possible source of error might be that dilatal produced a very transient effect. For instance, if after the administration of a tablet the blood-flow improved for only a few minutes, the improvement might be noted by the patient but missed by our tests applied about an hour after the last tablet had been taken by the patient. Consequently twelve acute experiments were made in which the blood-flow in the legs at rest was measured over $2^1/_2$ hours during which dilatal was given. Table II shows that the resting blood-flow increased in 6 of 12 patients. In 2 of the 6 patients the blood-flow increased only in the calf muscles of one leg. The duration of the transient improvement was such that it might well have been missed by our tests.

It seems possible, then, that the subjective improvement claimed by some patients receiving dilatal may have been real. But the transient nature and short duration of this improvement indicate that more detailed information is required about the blood-levels of dilatal if a satisfactory dose frequency is to be worked out. The fact that only some patients tested in the acute clinical experiments responded to dilatal may be due either to the fact that not all patients absorb dilatal equally efficiently or to the fact that the blood-vessels of some patients respond to dilatal by dilatation whereas those of others do not. These factors require fuller investigation before the true value of dilatal can be assessed.

It has been shown, then, that dilatal can bring about a transient increase in resting muscle blood-flow in some patients. This does not necessarily mean that any increased tolerance to exercise—i.e., ability to do more work before being stopped by claudication pain—will follow. It was thought worth while to examine the relationship between the improvement in resting blood-flow and exercise tolerance in our patients to find whether an improvement in the blood-flow was reflected by a corresponding improvement in exercise tolerance. Such was not invariably the case, since in many patients the resting blood-flow improved without any improvement in exercise tolerance. Statistically there was no significant correlation between improvement in resting blood-flow and change in exercise tolerance ($r = 0{\cdot}022$).

Summary

A clinical trial was made of the effectiveness of dilatal in the treatment of intermittent claudication. 50 patients completed the trial, 24 being controls.

There was a statistically significant subjective improvement in the treated patients, but this improvement could not be confirmed by objective tests of blood-flow.

Acute clinical experiments showed that dilatal produced a transient increased resting blood-flow in the calf muscles of some patients. It therefore seems to be necessary to determine by individual clinical test which patients will respond to dilatal.

The 'Dilatal' (now known as 'Perdilatal') was supplied by Messrs. Smith & Nephew.

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REVERSAL OF PULMONARY HYPERTROPHIC OSTEOARTHROPATHY BY VAGOTOMY

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IN an exhaustive review of osteoarthropathy Mendlowitz (1942) grouped the ætiological factors under the headings "pulmonary," "cardiac," "hepatic," "gastro-intestinal," and "miscellaneous"; and these factors covered a very wide range including roundworm infestation, cirrhosis of the liver, myxoid tumour of the right auricle, and thyroidectomy. Mendlowitz also discussed the theories of causation under the titles "trophic," "circulatory," "toxic-infective," "mechanical," "toxic-mechanical," "anoxic," and "miscellaneous." His conclusions were not very different from those of Hippocrates, who first described the condition in the 5th century B.C. As West said in 1897, "clubbing is one of those phenomena with which we are all so familiar that we appear to know more about it than we really do."

Hypertrophic osteoarthropathy has been described in association with many conditions; but it is found most typically as a secondary manifestation of chronic pulmonary or cardiac disorder, such as severe emphysema, bronchiectasis, or congenital heart-disease; and yet it is extremely rare in chronic pulmonary tuberculosis. Its connection with bronchial carcinoma is well recognised; and clubbing of the fingers and toes, with or without pains and sometimes effusions in the wrists, elbows, ankles, and knees, may long precede pulmonary symptoms. The patient is often treated for "rheumatism" or "arthritis" for as long as twelve months before a neoplasm is revealed by radiographic examination of the chest. Such growths, though sometimes very small, may be accompanied by rarefaction of the shafts of the long bones, deposition of new subperiosteal bone at the muscular insertions into the shafts and at the diaphyseal ends, and quite substantial effusions into the related joints, as well as clubbing. All these changes are due to increased vascularity, in particular an increase in the terminal arterioles, and, Mendlowitz (1942) holds, "an increase in blood flow per unit of tissue caused chiefly [in the case of simple clubbing] by increased digital arterial pressure." The pain to which these pathological changes subject the patient is commonly not only the first symptom but also much the worst, robbing him of sleep for long periods. Since such lone changes are hardly ever associated with tuberculous lesions their presence may virtually end all doubt as to whether an isolated abnormal opacity in a chest radiograph is due to a neoplasm.

Alvarez (1948) estimated that as many as 50% of resectable bronchial carcinomas were accompanied by arthropathy, and suggested that articular symptoms were as common as respiratory. Hansen (1952) reviewed 100 cases of bronchial carcinoma and found 12 (excluding 5 with bone metastases) with joint pain; and such pain was the presenting symptom in 4. In my own experience I would place the prevalence of joint pain in bronchial carcinoma as 5–10%; and in these cases careful inquiry usually shows that arthralgia was the first abnormality noted (Flavell 1953).

It has long been known that resection of the growth is followed instantly by cessation of all pain, no matter how long this has been present, and that secondary changes such as clubbing of the nails and redness and swelling of the nail-bed at once resolve, the shape of the nails returning to normal as the nails grow out. This remarkable fact has led to much speculation but no conclusion; and hitherto no explanation of the mechanism involved has proved satisfactory. It is, for example,

difficult to conceive that a circulating toxin or metabolite should cease to function with amputation of the lung.

Wyburn-Mason (1948), however, stated that in two cases of hypertrophic osteoarthropathy that were known to him mere ligature of the pulmonary artery without removal of the lung had the same immediate effect in relieving arthropathy as excision. This might be assumed to support the theory of a circulating toxin arising from the neoplasm. Hansen (1952) described the association of arthralgia with bronchial carcinoma in four cases of his own. In three of these resection led to complete relief of symptoms due to osteoarthropathy. In the fourth case the operation was abandoned after extensive dissection of the hilum. Although no vessels were tied the pain disappeared as in the other three cases, and he speculated as to whether hilar neurectomy had brought about this result.

It has long seemed evident to me that only a neural reflex could explain the abrupt and consistent cessation of pain; and in the cases mentioned by Wyburn-Mason (1948) I believe that the arrest of symptoms was due, not to the ligature of the pulmonary artery, but to the fact that, as in Hansen's case, clearance of the hilum with severance of the nerve-fibres entering it, was first performed.

Operation

In the pursuance of this belief I have now performed a number of operations, mostly on patients with inoperable bronchial carcinomas accompanied by hypertrophic osteoarthropathy.

In several patients I performed as complete a hilar clearance as possible, dividing the pleural investment and all the fibres of the vagus or sympathetic entering the root of the lung. In these cases the joint pains were relieved as effectively as in other cases treated by pulmonary resection. In two patients who had clubbing and arthralgia exploratory thoracotomy alone had no effect.

As the vagus branches to the lung are easily recognised and isolated, I next tried division of these alone avoiding all interference with the rest of the hilum.

Case-reports

Case 1.—A man, aged 53, in February, 1953, noticed that his feet and legs had become swollen and painful, and he had to give up his work on this account. He was admitted to hospital where his knees also swelled and became painful. Pain also developed in arms and wrists and was so severe that it kept him awake at night.

Examination.—Clubbing of fingers and toes. Effusions in both knees and elbows with limitation of movement and swelling of interphalangeal joints. Tenderness of tibiæ and humeri. Radiography showed new subperiosteal bone formation on the right femur, and a mass at the right hilum.

Operation (May 11).—Right thoracotomy: an inoperable carcinoma was present at the hilum accompanied by numerous carcinomatous mediastinal glands. All the branches of the vagus entering the hilum were identified and cut. Biopsy showed polygonal-cell bronchial carcinoma.

Postoperative Course.—Immediately after operation all joint pain was abolished and limb movements at once greatly improved. On Nov. 20 his doctor reported: "He is going downhill and losing weight, but the pains for which he had his neurectomy have never recurred." The patient died on Feb. 16, 1954, without having had any recurrence of his joint symptoms.

Case 2.—A man, aged 49, in January, 1953, first noticed swelling of ankles, wrists, and hands. February: onset of aching pain in knees and elbows which kept him awake; movement of these joints greatly limited. March: pains worse.

Examination.—Gross clubbing of fingers and toes. Swelling of wrists and ankles. Radiography showed typical and extensive hypertrophic pulmonary osteoarthropathy of long bones; carcinoma in the upper lobe of the left lung.

Operation (April 13).—Left thoracotomy: irremovable carcinoma arising in the upper lobe, extending into the hilum, and involving the arch of the aorta. The branches of the vagus entering the hilum were alone cut and the chest closed.

Postoperative Course.—All joint pains were dramatically relieved, and within twenty-four hours the patient could flex his knees and ankles for the first time in weeks. On July 23 his doctor reported: "Going rapidly downhill, but no pain or swelling of joints."

Case 3.—A man, aged 68, was admitted to hospital on March 24, 1955, with cardiac infarction and was found to have an abnormal opacity in the lower lobe of his right lung. Squamous carcinoma cells present in sputum. Refused operation. In October he began to have rheumatism-like pains in elbows, wrists, ankles and knees, gradually becoming more severe and causing him considerable distress.

Examination.—Complaining bitterly of joint pains. Severe clubbing of fingers. Some swelling of affected joints. Radiography showed new subperiosteal bone on shafts of long bones, characteristic of hypertrophic osteoarthropathy.

Operation (Sept. 19).—Right thoracotomy: mass of neoplasm in right lower lobe; secondary deposits on surface of upper and middle lobes and on parietal pleura. The hilum of the lung was not touched but the right vagus was picked up high on the mediastinum above the vena azygos and cut.

Postoperative Course.—The following day all joint pains had vanished and they have never recurred. The swelling of joints subsided within a day or two. The patient was completely relieved of skeletal symptoms.

Case 4.—A man, aged 45, in August, 1955, began to have swelling and later pain in the ankles. A month later the knees were swollen and painful; and after a further month the wrists were swollen and elbows and fingers were stiff and painful.

Examination.—Gross clubbing of fingers and toes. Gross effusions in both elbows, knees, and ankles. Radiography showed typical hypertrophic osteoarthropathy of all the long bones; small opacity in the upper lobe of the left lung. Squamous cells were present in the sputum. The patient agreed to a two-stage operation.

First Operation (Nov. 23).—A left intercostal incision was made and the presence of an operable carcinoma in the upper lobe of the left lung confirmed. Without disturbing any of the hilar structures the left vagus was picked up just distal to its recurrent laryngeal branch and cut; the chest was closed.

Postoperative Course.—The following morning the patient was asked if he felt any different. "Goodness me, yes," he said, "all my pains are gone; and look—I can bend my knees for the first time in weeks!" Within forty-eight hours the effusions in his knees and ankles had almost disappeared, and neither these nor the joint pains have recurred.

Second Operation (Nov. 30).—The wound was reopened and a left upper lobectomy carried out. The tumour was a squamous-cell carcinoma and there was no spread to regional glands. The second operation made no difference to the patient, all of whose joint symptoms had already disappeared in the week after vagotomy and before resection of the lung.

Case 5.—A man, aged 59, six months before admission, began to have aching pain in his knees and ankles, and later in the wrists and elbows. The pains persisted until operation and were sufficiently severe to keep him awake at night. Some time after their onset he began to cough and to lose weight.

On examination his fingers were clubbed and there were small effusions in both knees. Radiographs of the chest showed collapse of the middle and lower lobes of the right lung, and bronchoscopy confirmed the presence of an inoperable squamous-celled carcinoma of the bronchus. There was well-marked new subperiosteal bone formation down the shafts of radius, ulna, tibia, and fibula on both sides of the body.

Operation.—A 6-in. long thoracotomy was performed just below the angle of the right scapula, and the fifth intercostal space was incised sufficiently to enable a retractor and a Nelson malleable light to be inserted. The upper lobe of the lung was drawn downwards to expose the superior mediastinum, and the vagus nerve picked up with a hook as it passed down a few inches below the thoracic inlet, and cut with long scissors. The incision was closed after the lung had been fully inflated; the whole operation lasted less than a quarter of an hour. The patient's pains were completely abolished for the first time in six months.

Discussion

In two of these five cases the branches of the vagus entering the hilum on the affected side (right in case 1, left in case 2), were cut; and this led to immediate and complete relief of joint symptoms and resolution of

effusions. In the last three the hila were not disturbed but the vagus on the side affected (right in case 3 and 5, left in case 4) was isolated as far away as possible and cut. Equally dramatic relief and disappearance of joint swelling followed.

It would seem therefore that the manifestations of pulmonary hypertrophic osteoarthropathy are caused by a neural reflex passing from the affected lung in the fibres of the vagus nerve, and can be terminated by severing the vagus even when the related growth is irremovable.

This finding casts an interesting light on the function of the vagus and the nature of osteoarthropathy, and it affords a certain method of relieving the persistent and distressing pain of osteoarthropathy.

Summary

In cases of bronchial carcinoma associated with hypertrophic osteoarthropathy, severing the vagus nerve on the side of the affected lung has promptly dispelled the symptoms and signs of osteoarthropathy.

Case 1 was referred by Dr. S. Locket, case 2 by Sir Horace Evans, case 3 by Dr. A. E. Clark-Kennedy, and cases 4 and 5 by Dr. J. M. Gray.

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A NEW WAY OF TREATING FLAT FEET IN CHILDREN

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Two kinds of flat feet are found in children. Congenital pes planus is the rarer of the two because most children with flat foot acquire it by everting the heel of an otherwise normal mobile foot (fig. 1).

The normal foot bears weight chiefly at three points: the heel and the heads of the first and fifth metatarsals (fig. 2). This three-point weight-bearing is converted into a tripod by the longitudinal and transverse arches. If the foot is flat or everted, the child bears weight as well along the inner border of the foot, which is not suitable for weight-bearing. The gait therefore becomes awkward. The child may try to compensate by walking "pigeon-toed," and some who walk in this way and start with a mildly everted heel manage to reform the foot. If the foot cannot compete with the eversion, the child walks with the feet splayed outwards—"Charlie Chaplin" gait. In either case there is a tendency to tread down the stiffening of the outer wall of the heel-seat of the shoe and to wear down the outer side of the heel of the shoe (fig. 3).

Established Methods

Some pædiatricians believe that flat feet in children correct themselves spontaneously. a visit to any orthopædic department dealing with adults or, more especially, to any military recruiting depot or orthopædic unit will rapidly dispel such an illusion.

There are two established approaches to the problem.

Arch-supports

For many years Continental schools have prescribed rigid arch-supports. These do raise the arch, but only by persisting with the fourth and unnatural weight-bearing area (fig. 2). The consequence is that the arch does not develop strength and collapses once more when the support is removed. Because of this method of treating flat feet in children rigid arch-supports were a standard issue in the German army of the 1939–45 war.

In other words, once a child is used to arch-supports it cannot do without them. Ordering arch-supports for a child is more than a prescription—it may be a life-sentence.

Tilted Elongated Heel

The second method, which is almost universal in English-speaking countries, is to correct eversion by the Thomas heel—i.e., by tilting and elongating the heel of the shoe on the inner side. If the heel fits snugly, the tilt does correct the eversion. Unfortunately, to protect the welt one has to elongate the heel on the inner side, and so the forefoot is also inverted slightly. Consequently, however long the child wears these altered shoes, the foot and heel relapse in some degree afterwards.

The tilted elongated heel has other disadvantages, the main one being that it is difficult to preserve the snug fit of the shoe round the child's heel. The foot tends to slip down the slope to the outer side of the shoe, deforming the outer wall of the heel-seat and wearing the heel down along the outer border (fig. 3).

Once the grip on the heel is lost, the shoe must be repaired or renewed; otherwise the method becomes ineffective. In the case of hard-playing little boys the heels have to be repaired at least every two or three weeks, and the shoes do not long retain their shape. Repairs and replacements become expensive and irksome.

To be effective, the shoes with tilted elongated heels must be worn constantly. The child must not, of course, walk barefoot; but also he should not wear slippers, sandals, gum-boots, or football boots, because it is impracticable to alter these types of footwear.

The disadvantages in treatment by the tilted elongated heel are as follows:

(1) Although suitable for treating knock-knees, they are not wholly effective in forming or re-forming the arch of the foot.

(2) For them to be effective at all there must be continuity of treatment. The child cannot wear slippers, sandals, gum-boots, or football boots without breaking this continuity of treatment.

(3) For them to remain effective the shape of the shoe and the tilt of the heel need conscientious and constant supervision, and frequent repair and renewal.

(4) Repairs and renewals of shoes are expensive.

Corrective Heel-seat

The heel-seat described here is effective in correcting the flat everted feet of growing children and does not

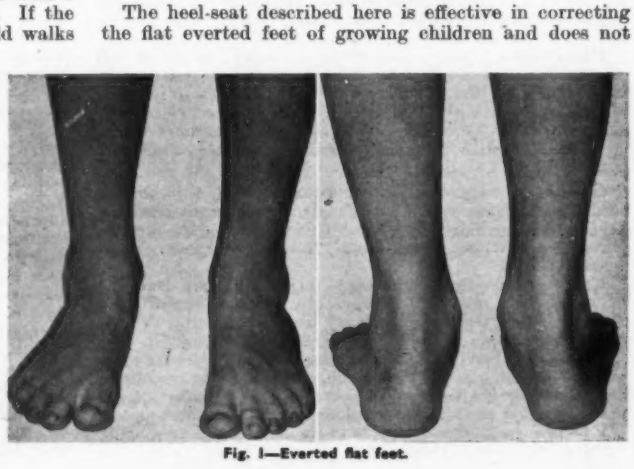

Fig. 1—Everted flat feet.

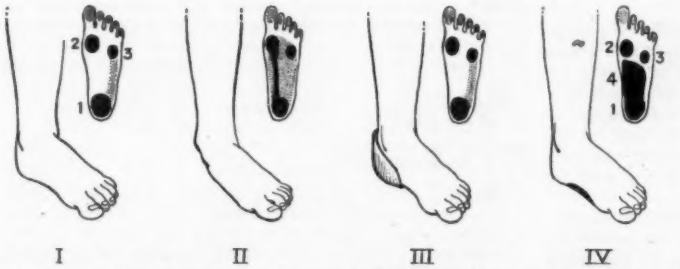

Fig. 2—Manner of weight-bearing: I, in normal foot (weight is borne on heads of first and fifth metatarsals and on heel); II, in flat foot (unnatural weight-bearing along inner border of foot); III, with corrective heel-seat (normal tripod weight-bearing is resumed); IV, with arch-support (a fourth and abnormal weight-bearing surface is added).

suffer the disadvantages of the tilted elongated heel. It is the first method which, in a positive manner, forms and develops a normally arched foot.

The idea of the corrective heel-seat is based on two premises:

(1) With the forefoot held flat on the floor, inversion of the heel produces an arch, and the greater the inversion the higher is the arch. In other words, with the heads of the first and fifth metatarsals bearing weight normally in the shoe, correction of the eversion of the heel corrects the flat foot. A vertical heel gives the flat foot a normal arch.

(2) The growing foot develops and functions in the shape in which it is held—i.e., if the growing foot is held and allowed to function in the normal shape it will "set" in the normal shape. An extreme example of this was provided by the now discarded Chinese practice of constantly binding the feet of baby girls into a "club" shape. With growth they developed fixed club-feet. Similarly, if we allow children's feet to function with a normal arch, they develop normally shaped feet. Moreover, if the foot is so held without arch-supports—as the heel-seat acts—it will develop a strong arch and strong foot.

The heel-seat shown in figs. 4 and 5 is so constructed that it fits snugly into the back of the shoe, boot, sandal with heels, or even slipper, so long as the stiffening of the heel of the shoe, boot, slipper, or sandal is strong enough to maintain it in position. When snug in the back of a shoe the inner surface of the heel-seat is in the shape of a normal heel in the normal vertical position. As soon as the child puts on the shoe with a heel-seat, any eversion of the heel is corrected, and it is a virtue of the appliance that the child does not feel any discomfort.

Results

Fig. 5 shows the immediate effect of the heel-seat on the shape of the foot. Fig. 2 shows the manner of weight-bearing:

I, in the normal foot.

II, in the flat foot with unnatural weight-bearing along the inner border of the foot.

III, with a corrective heel-seat (there is restoration of normal tripod weight-bearing).

IV, with an arch support (there is still an abnormal weight-bearing surface).

After heel-seats have been inserted, the child's gait is almost immediately and immeasurably improved. "Pigeon-toed" or splay-feet gaits are corrected, and the child is more agile and less awkward. The effect on gait can be assessed from the way in which the shoes wear down. Whereas previously the heels of the shoes wore down quickly on the outer side and the heel-seat became deformed, with the corrective heel-seat the heel wears evenly and the shoe maintains its shape. Moreover shoes last at least twice as long before they need repair.

I have been using heel-seats for more than seven years, during which I have prescribed them for about 500 children. I find that the average time a child must wear the heel-seats constantly before the arch is "set" is from two to two and a half years. The arch is then strong and permanent, and no further treatment is required.

Fig. 3—Stages in deformity of shoes of one schoolboy. He not only wears down heels on outer side but also deforms heel-seats. When heels of shoes are purposely tilted, deformity of heel-seats still results.

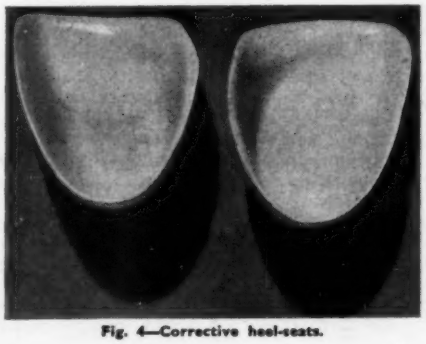

Fig. 4—Corrective heel-seats.

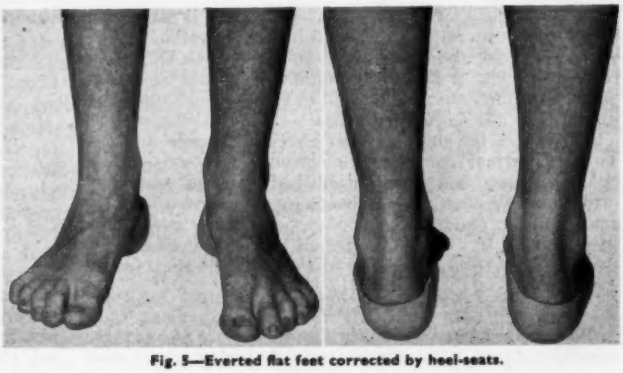

Fig. 5—Everted flat feet corrected by heel-seats.

Comments

The heel-seats have to be made individually of plastic material from plaster-of-paris moulds of the child's feet and are therefore expensive. I hope it will soon be possible to arrange for manufacture of the heel-seats in a light, cheap, and durable form and in a wide range of sizes. It takes from six to nine months before the average child grows out of any one size. Only one pair of heel-seats is required at a time, for they can be transferred as shoes are changed.

For ordinary flat foot these heel-seats could be prescribed by family and school doctors and dispensed by appliance makers, or by trained employees in any good shoe store. If the heel-seat fits the child's heel it is the right heel-seat. So prescribed it would relieve some of the congestion in hospital orthopædic departments. It may also be used prophylactically in convalescence if the child's feet are weakened by illness or recumbency.

I am now convinced that the heel-seat gives us a sure, simple, and economical method of correcting flat, and developing strong, feet in children. When we can use a plastic—e.g., laminated fibre-glass—a thin layer of which can stand big weights, we may be able to use the heel-seat also for the flat feet of adults.

ELECTRO-ENCEPHALOGRAPHY IN CHILDREN WITH RECURRENT ABDOMINAL PAIN

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IN 1912, Still suggested that "masked epilepsy" could account for attacks of sudden abdominal pain in children. From the few details provided, the diagnosis is open to criticism on several counts and indeed the suggestion has found few proponents until recently. Lately, however, the diagnosis has won some adherents abroad (Klingman et al. 1941, Moore 1944, Livingston 1951, Blumberg 1954), and a few in this country. In Conway's (1951) series abdominal epilepsy was diagnosed once in 243 cases, and Mac Keith and O'Neill (1951) state that as the sole manifestation of epilepsy abdominal pain is rare; but it has been affirmed (Wallis 1955) that "the more commonly it [abdominal epilepsy] is sought the more commonly it appears." Some of these are only single case-reports, and the sum total of recorded cases is small. The absence of any control series should also be mentioned.

The diagnosis of "abdominal epilepsy" is based on some such criteria as the following (Livingston 1951): (1) attacks of abdominal pain followed by exhaustion and sleep; (2) a favourable clinical response to treatment with anticonvulsants; (3) electro-encephalographic (E.E.G.) records considered characteristic of epilepsy.

Because of the small number of reported cases and the lack of normal controls, we consider that criteria of diagnosis have not been established and, as part of a wider investigation into the nosology of recurrent abdominal pains in children, they have been under review for some time. In view of the recent interest (*Lancet* 1954, 1955) we felt that an account of the E.E.G. findings would be of value.

Material

The children were between 3 and 14 years of age: we included those who complained of abdominal pains, recurring over a period of at least three months, severe enough to cause some interference with normal activities, and in whom no evidence of organic disease was found. The only omission in the series with abdominal pain, as in the control series, was a very small number of children who were suffering from fits but who also had abdominal pain, either as an aura or unrelated to the fits.

TABLE I—E.E.G. ABNORMALITIES IN 133 CHILDREN WITH AND 133 CHILDREN WITHOUT RECURRENT ABDOMINAL PAIN

—	With pain	Without pain
Resting record:		
Normal	121	120
All abnormalities*	12	13
Resting and evoked:		
All abnormalities*	18	13

* Including "focal spikes" (6 in abdominal-pain cases and 3 in control series), which may migrate, change site, or disappear (Gibbs et al. 1954, Kellaway 1953), and "localised slow activity" (2 in abdominal-pain cases and 1 in control series). For neither of these is there definite evidence of an enhanced tendency to epilepsy.

Hospital Series

With these provisos, all the children with abdominal pains referred to a hospital outpatient department during a limited period had E.E.G.s taken. Over the same period, E.E.G.s were taken of other children of approximately the same ages, from the ordinary run of non-acute hospital patients. There were 96 children with abdominal pains as defined and 55 patients without abdominal pains.

School Series

As part of an investigation of abdominal pains in an unselected school population (Apley and Naish 1956), E.E.G.s were taken from children attending school clinics for routine examination. A series of 37 children with abdominal pains was obtained, and 78 of those without pains were used as controls in corresponding age-groups.

To avoid any possible bias, requests for E.E.G.s were made with no information other than the heading of "hospital series" or "school series," so that all reports were made without knowledge of whether the patient had or had not abdominal pains. One of us (C. T.) made all the reports, and those which appeared in any way abnormal were re-examined and discussed.

TABLE II—E.E.G. "EPILEPTIFORM" ABNORMALITIES IN 133 CHILDREN WITH AND 133 CHILDREN WITHOUT RECURRENT ABDOMINAL PAIN

—	With pain	Without pain
Definite epileptic:		
Resting record	2	5
Resting and evoked	14	14
Definite and borderline:		
Resting record	4	9
Resting and evoked	22	22

Results

We found no significant differences between the hospital and school series of children with abdominal pains, and the two groups are therefore discussed together. Similarly the hospital and school children without abdominal pains are grouped together for the purpose of discussion. In assessing results the difficulty of defining an "epileptiform tracing" arises, and will be briefly discussed later.

If all E.E.G. abnormalities are grouped together it is seen (table I) that, comparing children with and without pains, there is almost complete identity on the resting records. If, however, evoked responses (hyperpnœa and photic stimulation) are considered to be significant, and are therefore included, there is a slight preponderance

of E.E.G. abnormalities in children with pains.[1] Such a preponderance, small though it is, is however made up largely of focal spikes, which we do not consider to be indicative of epilepsy.

If "epileptiform" records alone are compared in the two groups (table II), the children without pains show rather more abnormalities in the resting records; while of children with a normal resting record those with abdominal pains produce more "epileptic" responses with hyperpnœa and photic stimulation.

None of the differences between our two groups is statistically significant at the 5% level of probability.

Discussion

It is difficult to discuss "abdominal epilepsy" without defining "epilepsy," the undefinable. Our remarks are confined to an alleged association between recurrent abdominal pain and epilepsy. Our conclusions are based on the premise that a group of children with epilepsy shows a significantly higher proportion of characteristically abnormal E.E.G.s than does a group of non-epileptics.

In all four groups of children—hospital and school children, with or without recurrent abdominal pains—the distribution of abnormal E.E.G.s was similar. The comparative figures are substantially unaffected, whether resting and/or evoked records are considered. The similarity between the four groups suggests that E.E.G. abnormalities and recurrent abdominal pains are not associated or inherently related.

We infer that the suggested causal relationship between abdominal pains and cerebral dysrhythmia may be based on: (*a*) a failure to compare E.E.G.s with those of apparently normal children of similar ages and attainments; and (*b*) a consequent acceptance of E.E.G. variants as indicative of epilepsy.

We realise that a small proportion of children with epilepsy also have recurrent abdominal pains. Most, if not all, however, can be recognised if the history of fits, turns, faints, spells, &c., is meticulously taken, as we attempted to do in our children with pains and in our control series. As a sole manifestation of epilepsy, abdominal pain must be rare. But even the overt association of the two is relatively unusual, from our figures; and if the few children suffering from fits had not been excluded from our series the results would have been affected only to an insignificant degree. Our cases differ in many respects from the series of 33 children with "cyclical vomiting" and a remarkably high number of E.E.G. abnormalities reported by Millichap et al. (1955). In that series there was admittedly some selection of cases (14 children had a history of fits), vomiting was periodic in type and prolonged, and abdominal pains occurred in only about half the patients.

Since an abnormal E.E.G. is admittedly much commoner in epileptic than in non-epileptic patients, our findings suggest the corollary is also true and that *children with no symptoms other than recurrent abdominal pains* should no more be considered "epileptic" than children without them.

Summary

Electro-encephalograms were taken from 133 children with recurrent abdominal pains but no demonstrable organic disease and from 133 children of corresponding ages without abdominal pains. A very small number with a history of fits were excluded from both groups.

In the two groups the proportion with epileptiform E.E.G.s was almost identical.

Since epileptiform E.E.G.s are significantly commoner in epileptic than in non-epileptic patients these findings lend no support to the view that there is a relationship between epilepsy and recurrent abdominal pains in childhood.

We are indebted to Dr. Grey Walter and to Miss E. H. L. Duncan, M.A., B.SC., for helpful advice, and also to the three recordists, Mrs. A B. Spear, Miss J. P. Rockett, and Miss V. D. Heaven, whose patient work with the children was of special importance.

1. Walter (1950) has shown that so-called diagnostic epileptic patterns can be evoked from normal resting records in some "normal" persons, a finding confirmed by Jewesbury (1952). Gastaut (1953) suggests that these evoked responses are probably better regarded as a measure of the convulsive threshold rather than as diagnostic of epilepsy.

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RETROCLAVICULAR BLOCK DISSECTION IN THE DIAGNOSIS OF SARCOIDOSIS OF THE LUNG

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SARCOIDOSIS of the lung is less uncommon, and less benign, than was formerly supposed. Increased knowledge of the disease, and more widespread use of tuberculin tests and mass radiography have been largely responsible for this disease being diagnosed more frequently.

At Solliden Sanatorium, which serves a population of 145,000 about 300 cases of sarcoidosis of the lung have been detected in the past five years.

Criteria for Diagnosis

Unequivocal diagnosis of sarcoidosis of the lung is impossible. We have adopted the following criteria:

(1) The patient should have the typical history and signs and/or radiographic evidence. The relative paucity of symptoms contrasts sharply with the extent of the lesions, which are widespread. Hyperglobulinæmia should be sought.

(2) Other diseases (e.g., tuberculosis, pneumoconiosis, Hodgkin's disease, neoplasm, and the mycoses) should be excluded.

(3) Corroborative histological evidence should be obtained by biopsy of lymph-nodes and by Kveim's test.

Sarcoidosis can be diagnosed when only criteria (1) and (2) are satisfied, provided that lesions are found in at least three organs; but we are never fully satisfied without positive evidence from biopsy. Most cases of suspected sarcoidosis of the lung are discovered by radiography, and in such cases there are commonly no enlarged superficial lymph-nodes or cutaneous lesions. In such cases we have found retroclavicular block dissec-

tion (Daniels 1949) invaluable; and we have applied this method in 304 cases since the beginning of 1952.

Technique

The operation should be done by an experienced surgeon, because vulnerable structures lie in the operation field.

The biopsy is done on the more severely affected side, judged radiographically; or, if both sides are affected equally, on the right side. After injection of local anæsthetic the skin and platysma muscle are incised for 3–4 cm. parallel with, and 1–2 fingerbreadths above, the clavicle. The superficial fascia is incised along the lateral border of the sternocleidomastoid muscle, which is retracted medially exposing the pad of fat on the anterior surface of the scalenus anterior muscle. Care should be taken to avoid injuring the lymphatic duct on the right side and the phrenic nerve and the thoracic duct on the left side. Sometimes the omohyoid muscle lies rather low, in which case the pad of fat is grasped above that muscle. The pad is drawn forward and carefully examined. In the pad lymph-nodes (which are part of the mediastinal system) may be visible or palpable, and these are removed; but, if no node is detected, as much as possible of the pad is removed. The incision is then closed.

The discomfort caused to the patient by this operation is very slight.

Histological Findings

In sarcoidosis the lymph-node tissue is diffusely, and often densely, infiltrated by discrete, usually spherical, epithelioid-cell clusters of roughly uniform size. Some of these clusters contain giant-cells of the Langhans type in which we have occasionally found inclusions (either Schaumann or asteroid bodies). There may be slight central coagulation necrosis, chiefly fibrinoid, and also small areas of fresh caseous necrosis in occasional clusters of epithelioid cells. Gross caseous necrosis is not found. Collagen fibres, commonly hyalinised, appear first at the periphery of the epithelioid-cell clusters, which are gradually transformed into hyaline masses. In advanced cases some epithelioid-cell clusters may not be hyalinised, whereas others are partly or fully hyalinised.

Histological differentiation between sarcoidosis and other diseases, notably tuberculosis, is sometimes difficult. This differentiation is based chiefly on the presence and degree of caseation; but if no acid-fast bacilli are found it is often impossible to distinguish histologically between sarcoidosis and tuberculosis.

Sarcoidosis should never be diagnosed on the basis of the histological findings alone.

Results

The results of retroclavicular block dissection in 304 cases are shown in the accompanying table. In only 4 cases were no lymph-nodes found. In 130 cases histological examination showed healthy nodes or non-specific lesions, but in 168 cases (55%) this examination helped to establish the diagnosis. Of 237 patients with clinical and radiographic evidence of sarcoidosis, biopsy by this method supported the diagnosis in 148 (62%).

PRELIMINARY AND FINAL DIAGNOSES IN 304 CASES

Preliminary diagnosis	No. of cases	Diagnosis after biopsy						
		Sarcoidosis	Pulmonary tuberculosis	Hodgkin's disease	Carcinoma of the lung	Uncertain (tuberculosis or sarcoidosis)	No lymph-nodes found	Lymph-nodes healthy or lesion non-specific
Sarcoidosis	237	148	Nil	1	Nil	Nil	3	85
Pulmonary tuberculosis or sarcoidosis	24	5	7	Nil	Nil	1	Nil	11
Neoplasm or pulmonary tuberculosis	38	Nil	3	Nil	4	1	1	29
Unknown	5	Nil	Nil	Nil	Nil	Nil	Nil	5
Total	304	153	10	1	4	2	4	130

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CHRONIC PAROXYSMAL HYPOGLYCÆMIA (WHIPPLE'S SYNDROME)

A FIFTEEN-YEAR CASE-REPORT

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THE second World War, the natural reluctance of the patient to submit to an operation hitherto unknown in this region, and the diffidence of the surgeon about operating on a patient who seemed perfectly normal for months at a time have given me the opportunity of observing for fifteen years a patient whose pancreas contained a solitary insulin tumour. Removal of this has apparently arrested slowly progressive mental degeneration, restored the blood-sugar level to normal permanently, and enabled her to resume full-time work on the hospital staff.

Although several hundreds of such cases have by now been reported, I believe it is still worth while publishing each case verified by either operation or necropsy. Moreover at operation the appearance of a "normal" pancreas may discourage the surgeon from proceeding with a blind partial excision and thus make him miss a radical cure.

Case-report

A female hospital worker, aged 21, was found, on the morning of June 21, 1939, in coma on the floor by her bed. Fortunately my first assistant, Dr. A. Hovnanian, found that her blood-sugar level was 27 mg. per 100 ml. and the administration of glucose led to prompt recovery. During the fifteen years that followed this first attack, until the day of her operation on Oct. 1, 1954, despite every effort by diet and frequent meals to keep up her blood-sugar level, she went into coma frequently, and thirty-two blood-sugar estimations were made, giving 27–64 mg. per 100 ml. and once 84 mg. per 100 ml. A glucose-tolerance test in 1949 gave 39–155–38 mg. per 100 ml., and in 1952 55–105–59 mg. per 100 ml. Gradually the patient became less and less able to work, and mental degeneration set in. During her last attack, immediately before operation, she became maniacal and was given the choice of either submitting to operation or being transferred to a mental hospital.

Operation (Oct. 1, 1954).—Blood-sugar levels were as follows: 40 mg. per 100 ml. immediately before operation; 230–120–122 mg. per 100 ml. during operation, when glucose was being continuously administered; and 169, 160, 175, 154, and 127 mg. per 100 ml. on successive days after operation. Sixteen subsequent blood-sugar estimates were within normal limits, and the patient made a good recovery and is now back on full work. Her mental improvement was noticed immediately and has been maintained during the past year.

Comments

The one point I wish to emphasise about the operation is that, the completely exposed pancreas appeared to be perfectly normal, without any reddish nodules or nodules of any kind palpable by the exploring finger on the anterior surface. In view of the history it was decided to remove the tail and body of the pancreas, which was accordingly lifted clear of its bed and turned over. On palpation of the head between finger and thumb a hard nodule, perfectly round and just over 1 cm. in diameter, with a thin calcareous shell, was discovered embedded in the substance of the head. This nodule was removed

separately from the main excised portion. Two large drainage tubes were inserted down to the bed of the excised portion of the pancreas, discharged freely for a month, and were removed six weeks later. Biopsy showed an insulin tumour strangled by fibrous tissue.

The patient weighed 10 st. 11¾ lb. on Sept. 20, 1952, and 9 st. 10½ lb. on June 20, 1955.

Numerous tests applied to this patient excluded other possible causes of her condition. Serial sections of the excised portion of the pancreas have not yet been examined; but, in view of the pathological report on the nodule, it is perhaps just as well that the more extensive operation was done.

Reviews of Books

Clinical Neurology

A. B. BAKER, M.D., professor of neurology, University of Minnesota. New York: Hoeber. London: Cassell. 1955. Vols. I, II, and III. Pp. 2021. 20 guineas the set.

IN a book remarkable for the quality of the printing and illustration, the thoughts of 64 American neurologists have been gathered. The mention of a few names will indicate the happiness of the editor's choices: Jasper (electro-encephalography), Woltmann and Kernohan (peripheral nerves), Breutsch (symptomatology and pathology of neurosyphilis), Kunkle and Wolff (headache), and Courville (cerebral anoxia). The book is a success and deserves a place in the reference library or on the bookshelf of the expert.

There are, however, some notable omissions: the effect of occlusion of the basilar and vertebral arteries is not considered in the chapter on vascular disease; there is no mention of peripheral neuropathies or cerebellar degeneration in association with neoplasia; some of the more recent evidence on the metabolic disorder in Wilson's disease has not been included; and the neurological effects of cervical spondylosis receive no notice.

Dr. Baker's aim was to present in encyclopædic form current knowledge of neurological diseases both common and rare, and to give an account of the many extensions of neurology into other branches of medicine. The first part of the first volume illustrates his attempt to systematise this amorphous subject. Thus, there are sections on history-taking and the technique of examination (admirably presented), followed by a fairly lengthy exposition of the accessory diagnostic methods. Later chapters deal with basic subjects, such as cerebral localisation, agnosia and aphasia, and cerebral anoxia. It is these basic chapters that first deviate from the editorial aim; for, although the radiology and the electroencephalography are presented very lucidly, the consideration of the diagnostic implications of ophthalmology tails off into some untidy guerrilla warfare relating to angiomatosis retinæ, Wilson's disease, dystrophia myotonica, and other matters.

After the basic principles, there are essays, rather than chapters, on the various aspects of neurology. The very brevity of some of the contributions carries dogmatism at times too far. Moreover, some writers, in their attempts to give an authoritative verdict, have introduced contradictions; thus, the concept of narcolepsy on p. 1920 is totally at variance with that expressed on p. 1204.

In so large and complex an undertaking, such faults are inevitable, and the good easily outweighs the bad. Dr. Baker and his team have made a definite contribution to medical literature and their work will undoubtedly gain in value as it moves through further editions.

Whys and Wherefores in Tuberculosis

GEORGE DAY, M.D. London: National Association for the Prevention of Tuberculosis. 1955. Pp. 44. 3*s*. 6*d*.

A DELIGHTFULLY written booklet for patients by a physician of exceptional experience in the psychological aspects of tuberculosis. A short historical review is followed by concise common-sense epidemiological information, easily appreciated by patients. The factors affecting resistance are briefly examined and the different aspects of treatment simply and clearly discussed. While some medical readers may question one or two statements (e.g., "B.C.G. or vole bacillus vaccination will probably become accepted as a routine for new-born babies"), every reader will be stimulated by this brief and intelligent review.

Anatomie radiographique du massif facial

M. BOUCHET, otorhinolaryngologiste des Hôpitaux de Paris; G. DULAC, electro-radiologiste, ancien chef de service de la Fondation Curie; with the collaboration of R. PAILLER. Paris: Masson. 1955. Pp. 187. Fr. 2800.

THE interpretation of radiographs of the classical projections of the nose, nasal sinus, and adjacent structures of the face depends on a sound knowledge of the detailed radiological anatomy of this region. The authors carefully define each projection and then describe its features with the aid of simple diagrams in the first instance, followed by more complicated "schemas" as extra details are added.

Nine of the commonly used projections are thus dealt with, and then follows a brief section on tomography in the anteroposterior plane, treated in the same way. The second part of the book is devoted to illustrations of radiographs, with fully annotated diagrams. The radiographs are designed as an exercise in interpretation of the standard projections and of some of their variants.

The authors hope to improve the standard of interpretation of "sinus" films, since they regard the reports "sinuses clear" and "sinuses opaque" as often very inadequate. To anyone who takes the trouble to work conscientiously through the "schemas," interpretation should be relatively easy, for the basic anatomy should then present no difficulty. The book is well produced and easy to understand by anyone with an elementary knowledge of French.

Psychosomatics

MAX HAMILTON, M.D., senior lecturer, department of psychiatry, University of Leeds School of Medicine. London: Chapman & Hall. 1955. Pp. 225. 21*s*.

Dr. Hamilton has covered the subject in an admirable way, avoiding diffuse theoretical discussion for mainly factual and experimental findings. His book is a readable and successful attempt to present, from a scientific point of view, emotional and environmental factors in disease.

The first chapter discusses the physiology of the emotions, with many references to fundamental work, such as that of Cannon: and later chapters describe such conditions as asthma, peptic ulcer, hypertension, urticaria, and many others. Throughout, there is an unusually balanced presentation of the subject. The main points of evidence are given, and certain extremist points of view are criticised.

Smoking and its Effects

With Special Reference to Lung Cancer. SIDNEY RUSS, C.B.E., D.SC., emeritus professor, University of London. London: Hutchinson's Scientific and Technical Publications. 1955. Pp. 141. 8*s*. 6*d*.

Professor Russ is here writing for the general reader, and sets out to cover the history and practice of smoking, including opium and hemp as well as tobacco.

Nine-tenths of his book, however, is concerned with tobacco-smoking, and nearly half of it with the special problem of smoking and lung cancer. To succeed in summarising the history, methods, and implications of smoking in so small a space would indeed be a feat; and though the style is easy and readable the arrangement of material is uneven and sometimes haphazard. The early chapters contain interesting information, but their general effect is sketchy, and the arguments put forward are open to question. The author says: "Smoking is a very deep-rooted habit in the peoples of the world. Let us not try to stop it by methods which are almost bound to fail, but supplant the poppy and hemp by the tobacco plant." Though many would agree with him, even this small book contains evidence to suggest that the answer is not quite as simple as that.

Having spent most of his life directing and working in a laboratory for cancer research, Professor Russ gets into his stride when he comes to his main theme—the relation between tobacco-smoking and bronchial carcinoma. This

is thoughtful and thought-provoking and should appeal to readers who are interested in methods of scientific inquiry and proof. A chapter on medical and lay opinion illustrates amusingly the range of conclusions that may be drawn from the same evidence; but the general reader will probably be more interested to know the author's own verdict, which is "not proven."

This is a good-tempered book by one who holds that "most smokers are not addicts; the pleasure of smoking is real . . ." But it leaves an impression that the only serious objection to the present vast world consumption of tobacco is its possible relevance to cancer of the lung; and it does not therefore fulfil its claim to summarise present medical opinion and also to discuss the social implications of smoking.

Infant Nutrition in the Tropics and Subtropics

D. B. JELLIFFE, M.D., M.R.C.P., D.C.H., D.T.M. & H. World Health Organisation Monograph Series no. 29. Geneva. 1955. Pp. 237. 25*s*.

THE author, who is a W.H.O. visiting professor of pædiatrics in Calcutta, has a wide experience of his subject, obtained in West Africa, Jamaica, and now in India. He emphasises the importance of social anthropology as a background to pædiatric practice, and the need to learn the attitudes of mothers both to disease and feeding habits. He is concerned with methods of instruction suitable for primitive or illiterate persons, and there is a good chapter on nutrition instruction in the maternal and child-health centre. A large part of the monograph is taken up with an account, country by country, of infant-feeding practices.

Dr. Jelliffe is most interesting when writing from his experience: he is far less apt with the literature, and the text is too frequently encumbered with long quotations from his 312 references. The 24 figures and two coloured plates are of the high quality we have come to expect in United Nations publications. The photographs taken in homes and hospitals leave a vivid impression of the tragedies of disease in childhood.

Medical Research: Mid Century Survey.—This report of the American Foundation on Medical Research in the United States, which was discussed in a leader in our issue of Jan. 7 (p. 29), is published in this country by Messrs. J. & A. Churchill, of London, at 5 guineas for the two volumes.

An Atlas of Bone-Marrow Pathology (2nd ed. London: Heinemann. 1955. Pp. 85. 30*s*.).—That a second edition of Dr. M. C. G. Israëls's atlas has been called for shows that it has secured its place among the standard hæmatological works. The text has undergone minor changes: transitional or intermediate megaloblasts are now described and the plate illustrating the cytogenetics of erythroblasts is correspondingly modified; myeloid reticulosis and acute reticulum-celled leukæmia are also described, and there is an illustration of metastatic cells from a gastric carcinoma. All these are illustrated on a plate containing six new paintings. The colour reproduction is excellent. The atlas will be particularly useful to those who have to teach themselves hæmatology, and who cannot refer continually to actual slides.

Comparative Physiology of Reproduction (London: Cambridge University Press. 1955. Pp. 253. 50*s*.).—No. 4 of the memoirs of the Society of Endocrinology is based on a symposium held in July, 1954, at the University of Liverpool on the comparative endocrinology of vertebrates. This memoir, which has been edited by Mr. I. Chester-Jones, PH.D., and Dr. Peter Eckstein, reviews reproductive patterns in fish, amphibia, reptiles, and mammals and goes on to describe the effects of sex hormones in groups of vertebrates. Memoir no. 5 (Pp. 124. 25*s*.), on hormonal control of water and salt-electrolyte metabolism in vertebrates, completes the record of the symposium.

United States Dispensatory (25th ed. Philadelphia: J. B. Lippincott. London: Pitman Medical Publishing Co. 1956. Pp. 2139. £10).—The gestation period of elephants is lengthy, and it is not to be wondered that new editions of this enormous work of reference appear only every ten years. The latest is the "biggest ever," and in preparing it Prof. Arthur Osol, PH.G., and Prof. George Farrar, F.A.C.F., have drawn information from the *British Pharmacopœia*, the *International Formulary*, *New and Non-official Remedies*, and 25,000 issues of medical, pharmaceutical, biological, and chemical journals. The book is bound in heavy buckram which looks as though it will stand up well to constant wear during the next ten years.

Porphyrin Biosynthesis and Metabolism (London: J. & A. Churchill. 1955. Pp. 308. 30*s*.).—The papers given at the symposium on this subject held by the Ciba Foundation in London in February, 1955, under the chairmanship of Prof. C. Rimington, F.R.S., have now been published. The editors of the volume are Dr. G. E. W. Wolstenholme and Miss Elaine Millar, A.H.W.C.

New Inventions

DIATHERMY HÆMOSTATS FOR PROSTATECTOMY

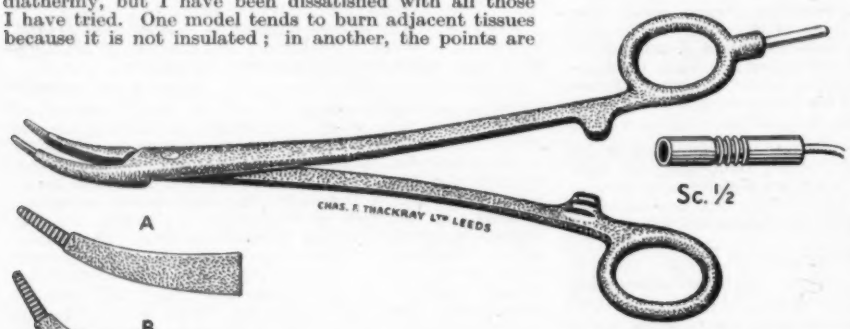
ESPECIALLY in those forms of prostatectomy in which the bladder is closed without drainage—e.g., Millin's retropubic operation and the Wilson Hey procedure—efficient hæmostasis is essential. Various artery forceps have been designed to obtain hæmostasis by diathermy, but I have been dissatisfied with all those I have tried. One model tends to burn adjacent tissues because it is not insulated; in another, the points are too broad and blunt and the bite is therefore unnecessarily large. Straight forceps are always difficult to use because the bleeding points in the prostatic bed are usually not on the floor but on the posterior and lateral walls.

The hæmostats which I designed some time ago to overcome these difficulties have proved so satisfactory that they may be of interest to others—although I must emphasise that I claim no originality for them. Their salient features are:

1. The insulation is carried to within 1/4 in. of the extremity.

2. The non-insulated part is slender and "fines" down to a slightly blunted extremity.

3. Two pairs are provided, both 9 in. long. The one in general use has only a slight curve. The other, with its more pronounced curve, is used for bleeding points on the lateral wall of the prostatic cavity on the side of the operator, thus making it unnecessary for the surgeon to move to the opposite side during the operation.



These instruments have been made for me by Messrs. Charles F. Thackray, of Leeds.

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THE LANCET
LONDON: SATURDAY, FEB. 11, 1956

Treatment of Infective Hepatitis

As we have no specific drug with which to attack the agent causing infective hepatitis, treatment must be directed to providing the best conditions for natural recovery. In general this means regulation of diet and provision of rest. The practical questions which arise are what kind of food should be given and for how long the patient should be confined to bed. Different views have been expressed on these points,[1–5] but the answers can best be sought by carrying out a large and carefully controlled therapeutic trial, as has recently been done by an American team working in the Far East.[6] In a series of studies, patients suffering from infective hepatitis were allotted at random to different treatment groups. The design of the experiment was arranged so that the doctor deciding to admit a patient to the investigation did not know what treatment the patient was to receive. Careful checks were made to ensure that the treatment ordered was actually carried out. The first inquiry into the effect of diet showed that patients forced to eat an abundance of calories, protein, and vitamins throughout their stay in hospital improved more rapidly than those patients eating only what they chose from a normally nutritious diet; but when they were examined a year later no difference was discernible between the two groups. In a second investigation, diets containing either 3000 or 4000 calories (of which 19% were supplied as protein) were compared with ones of the same calorie values but containing only 11% as protein. The diets with the higher protein content were associated with shorter illnesses. At a follow-up examination the patients who had received the high-protein high-calorie diet showed a slightly higher incidence of mild residual abnormalities compared with the other three groups.

A study of the effect of rest was more surprising: acutely ill patients improved just as rapidly when they were allowed up and about the ward at will as when they were strictly confined to bed. The duration of the acute illness, defined as the time from admission to the finding of a serum-bilirubin level of 1·5 mg. per 100 ml. or less and a bromsulphalein retention of 5% or less in forty-five minutes, was similar with the two regimens. There was no evidence that enforced bed rest led to a more rapid disappearance of hepatic tenderness or enlargement. The recurrence of symptoms after discharge to duty was equal in the two groups, and at examination after a year no significant difference was noted. In a further study, patients were subjected to severe exercise at a physical reconditioning centre, while others were kept in hospital and allowed to rest at will. The strenuous activity began as soon as the acute stage of the illness (as previously defined) had subsided. Those in the early-exercise group later showed significantly more minor abnormalities, such as rises in serum-bilirubin and bromsulphalein retention, as well as more recurrences of symptoms and hepatomegaly; but these features disappeared in spite of continued exercise. When seen later, this group had more complaints of right-upper-quadrant pain and significantly more tender livers. CHALMERS et al. believe, however, that these findings were associated with little clinical disability and that no definitely harmful effects were caused by this strenuous exertion during convalescence.

It is important to emphasise that these experiments were carried out on previously well-fed healthy males during military service. It would be unjustifiable to transfer the conclusions to the treatment of all cases of infective hepatitis. Furthermore, as all the patients were transferred to a special centre, the various treatments were begun on the average about ten days after the onset of symptoms. The results therefore do not apply to the initial stage of the disease, when strict rest may be of greater importance. The results of a high-protein diet have often in the past been conflicting,[7–10] and from the clinical viewpoint the reduction in the duration of the illness, which is apparently sometimes achieved by diet, is generally not great. In this recent trial the significance of some of the mild residual clinical features which appeared in those exercised early or forced to eat large high-protein diets is difficult to determine. Hence, a doctor should hesitate before adding to a patient's discomfort by forcing on him a diet much greater than he feels inclined to eat. Nevertheless, in treating patients of military age, CHALMERS et al. make certain recommendations as a result of these studies. The daily diet for a patient with infective hepatitis should contain about 3000 calories, with approximately 150 g. each of protein and fat. During the stage of severe anorexia the patient should be encouraged to take frequent small feeds. Although the high-protein diet was shown on the average to hasten recovery, critically ill patients with severe liver damage may be harmed by excess protein and they clearly require special treatment with only a maintenance amount of protein. CHALMERS et al. believe that patients should stay in bed as long as acute symptoms persist, but as soon as they begin to feel well they should be allowed to get up regardless of the degree of jaundice. Rest in bed for one hour after each meal should be enforced, but otherwise they should be permitted the freedom of the ward. This moderate activity avoids the usual delay in overcoming the effects of long rest in bed and appreciably shortens the stay in hospital.

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Heat, Salt, and Water

As "payment" for the advantages of a highly developed heat-regulating mechanism, man must constantly make good the salt and water lost in the sweat. In the laboratory, sweat losses up to 8 litres in four hours have been recorded, but the high temperatures and work-rates involved cannot be long sustained, and the total lost in twenty-four hours in hot countries is probably rarely more than 10 litres. The salt content of sweat is so variable that the range of salt loss is hard to estimate. Moreover, there is considerable variation in the response of the individual exposed repeatedly or continuously to heat, and it has often been shown that a degree of acclimatisation develops. The features of acclimatisation are (1) an increase in the rate of sweating, (2) a lower pulse-rate, and (3) a lower body-temperature, as compared with the initial response to hot conditions; and these changes are accompanied by an increasing sense of well-being. Different workers have given different times for the development of acclimatisation, but five to fifteen days covers most estimates, provided the subjects are exposed to fairly severe conditions and also do physical work of moderate intensity.[1 2] The corollary to these findings is that the tolerance-time for severe conditions increases steadily during acclimatisation. These changes in sweat-rate, body-temperature, and heart-rate do not continue indefinitely; after about fifteen days there is little further change, except that the sweat-rate may gradually decline over a period of weeks or months.[3]

These findings form the basis for assessing water and salt requirement in conditions of heat. ADOLPH [4] has shown that man cannot adapt himself to a diminished water-supply. Furthermore, with one possible exception (the "free circulating water" of LADELL [5]), man cannot carry a reserve of water in the body: the drinking of extra water, before exposure to conditions of water loss, is useless because the excess water simply induces a diuresis. ADOLPH has also pointed out that thirst is a poor guide to water requirements, and severe dehydration can develop with an adequate water-supply available, when intakes of about 10 litres per day are needed. It might seem that with a diminished water intake a high sweat-rate would fall, and so lead to a rise in body-temperature; but it has been claimed that moderate water deficiency does not significantly alter the sweat-rate.[6 7] This problem has been re-examined by LADELL,[5] who has analysed data from experiments carried out some ten years ago by the Medical Research Council team at the National Hospital for Nervous Diseases, Queen Square, London. During short exposures to severe heat he found that abstention from water had no effect on the sweat-rate until the water debt exceeded 2·5 litres. This point has considerable academic as well as practical importance. The effects of acclimatisation and the considerable differences from person to person make the design of climatic experiments far from simple. In conducting climatic experiments in hot environments, when the subjects are sweating freely, should they be allowed to drink at will, or should water be replaced strictly according to the sweat loss? Or should there be a fixed ration for them all? Clearly, it would be easier to plan experiments of this kind if water intake had in fact no influence on sweat-rate. The problem was carefully investigated by ELLIS and his colleagues in the M.R.C. team at the Royal Naval Tropical Research Unit at Singapore.[8] They showed, quite clearly, that the amount of sweat secreted varied with the amount of water drunk. It seems that the reason for the disagreement between these and earlier results was that ELLIS and his co-workers were able, thanks to the work at Queen Square and the experience of the research-workers there, to control more exactly the conditions for their experiments.

LADELL [5] has also put forward the view that there is a volume of "free circulating water" which is approximately 2–2·5 litres, and that until this volume has been lost bodily function continues unimpaired. This view is in accordance with his studies of water deprivation in temperate surroundings, where he found little change in the volume of urine secreted until twenty-four hours after water intake ceased. In acclimatisation to heat this "free-water volume" may increase. BASS et al.,[9] after a very detailed study of acclimatisation in man, conclude that an important feature was an expansion of the extracellular fluid volume in the first few days of exposure to heat. They believe that this expansion (in which the blood-plasma was included) was largely responsible for the greater cardiovascular efficiency which they regard as the essential feature of adaptation to heat. We may provisionally conclude that water intake has a small but definite effect on the sweat-rate, although further work is needed on a wider range of environments and water intakes.

The question of salt requirement is equally important. At present we know that the salt content of the sweat is determined by the salt intake, by the degree of acclimatisation, and by the severity and the duration of the exposure to heat. MCCANCE [10] and others have shown that the commonly observed decline in the salt content of sweat with continued exposure to heat can be due to inadequate salt intake. The studies of BASS et al., however, indicate that with adequate salt replacement salt is retained during the first few days of heat exposure; and, in their view, the retained salt is needed for the increase in the extracellular fluid volume. Once this has been achieved, the kidneys excrete more or less salt, as required to maintain a balance. Calculations of sodium-chloride balances depend for their accuracy on the techniques used to take a sample of sweat. A convenient and widely used method is to collect sweat in an arm bag. By this method, LADELL has produced a chart from which intracellular fluid volume can be calculated from the salt and water balances.

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VAN HEYNINGEN and WEINER,[11] however, have demonstrated that the composition of arm-bag sweat is always more concentrated than general body sweat, and therefore calculations of balances based on the arm-bag method will exaggerate salt loss. Since much of the published work on sodium-chloride balances depends on arm-bag sweat analyses, it may be that salt requirements in the heat have been overestimated. It is interesting that Nigerians are said to have an intake of only 7 g. of salt a day or even less, and it has also been reported that their sweat is more dilute than that of fully acclimatised Europeans.[12]

So far, most physiological work on the effect of long-continued exposure to heat has been concerned with the initial stages of acclimatisation, and until these were worked out it was not possible to distinguish clearly the more remote effects. The importance of studying these is evident; for, until the demands of the environment are understood, the complications introduced by disease will be much harder to comprehend. Future work should include not only the young men who have hitherto been the main subjects of climatic physiologists, but women and children as well. Normal physiological values should be established for tropical countries, since textbook figures are often applicable only to temperate zones. For example, the average daily urine output is usually given as 1500 ml.; but in Singapore ADAM[13] has shown that the daily urinary output averages 1200 ml., and LADELL et al.[14] found that in Shaiba, before the extreme hot weather, the output was about 1000 ml., while in extremely hot conditions it fell to 700 ml. Until considerably more work has been done in the tropics, much of the advice given on salt and water requirements must remain empirical.

The Future of Work

AUTOMATION is a new word. The control of machines by machines is not a new idea, but the war-time development of electronics and of machines which can sum up a situation and adjust a process is making it a frequent idea in practice, and the automatic factory seems to lie ahead. It is part of the 20th-century material revolution which began with wireless, the automobile, and aspirin, and is now whirling through plastics, antibiotics, and atomic energy. Every invention, every new scientific application, in time transforms the conditions of human life, but it needs the shock of a new word to make people suddenly stop and consider where they are heading. Living from year to year and without a natural sense for recent history we quickly take for granted daily television, fresh foods out of season, the world's crises in the evening paper, and women at work in industry and the professions—as if they had been always so. Prof. LESLIE BANKS, in the paper on Industrialisation and Community Living, which we published on Feb. 4, said that Britain now has nearly a quarter of a million nurses and almost as many women teachers, and that the employment of men and women as clerks and in the distributive trades, in engineering and in chemicals, has greatly expanded in the last twenty years, while fewer are engaged in basic work like agriculture or coal-mining. "Two hundred years ago," the *Manchester Guardian*[1] remarks, "it took the efforts of every able-bodied man to maintain a standard of living we would now call poverty. The Industrial Revolution changed that by making possible an enormous increase of individual productivity. . . . If instead of having 700,000 men dig 220 million tons of coal a year we generated the same amount of energy in nuclear power stations of the first crude design, less than 100,000 men would be needed."

Technological progress has been abolishing jobs for at least a couple of centuries; and creating fresh kinds of work also. What is new today is the speed of change, measured in fractions of a working lifetime, and the numbers of people affected, in a society too highly organised to give the individual a free choice of occupation. A subcommittee of the United States Congress which recently reported on Automation and Technological Change,[2] thought that industry should provide organised re-training for workers, as well as financial compensation for the change of skill, and possibly change of abode, which the new work required. It recommended the government to collect statistics of occupational mobility, and to awaken people to the problems besetting their future employment, including the trend to larger impersonal businesses, the training of the elderly, and the threatened shortage of technicians and teachers of science in schools. Certainly if these problems are not solved we may expect unemployment and labour unrest as well as individual physical or mental breakdown. Modern industrial society already finds it harder to offer satisfactory employment to the dull, who need as much as other men to feel a sense of purpose in the community and to have an outlet for their creative urges. Mental hospitals already receive patients whose practical trouble is failure to find a satisfactory niche in life because their personalities belong to one of the minority groups, while modern society is planned more and more to suit the majority who cluster round the mean. A society which creates misfits needs advice on mental hygiene.

Professor BANKS raises also the problem of increasing leisure. He suggests that people might prefer to work a 60-hour week with 13 weeks' annual holiday rather than a 40-hour week with a fortnight, and the immediate value of this idea is its challenge to the present conventions of off-time. After all, the plan of resting the seventh day of every week was an invention of Semitic races, not practised in classical Rome or in other ancient civilisations. The British country-house classes expanded it into the weekend which everyone now expects: but habits can be changed. If health and output were the sole consideration (which they are not) it might be better to have one day off in every four, in some kinds of work anyway, rather than two at the end of every week. But it is noteworthy that the Soviet Union, having tried such an arrangement, has returned to a weekly rhythm.

11. van Heyningen, R., Weiner, J. S. *Ibid*, 1952, **116**, 395.
12. Ladell, W. S. S. *Ibid*, 1950, **112**, 15P.
13. Adam, J. M. Personal communication, 1956.
14. Ladell, W. S. S., Waterlow, J. C., Hudson, M. F. *Lancet*, 1944, **ii**, 491.

1. *Manchester Guardian*, Jan. 24, 1956.
2. Report of the Subcommittee on Economic Stabilisation of the Joint Committee on the Economic Report. United States Government Printing Office, Washington, 1955.

And how do people spend their leisure? There is very little information, though plenty of baseless belief, on what different sorts of people of different ages do with their time, and how this is changing with the coming of television, for instance. On this, as on a great deal of work psychology and sociology, the labour of research is waiting to be done. But the doctor's task, as champion of the individual's welfare, is above all to remind the planners of the new industrial age of the diversity of individuals. Automation will not bring happiness with its riches unless it is planned for men.

Annotations

TUBERCULOSIS THEN AND NOW

THREE medical journals in this country are concerned exclusively with diseases of the chest and tuberculosis. The youngest of them, *Thorax*, was founded in 1946; *Tubercle* started 27 years earlier, in 1919; and the eldest, the *British Journal of Tuberculosis and Diseases of the Chest*, published its first number 49 years ago, in January, 1907. The special number marking its golden jubilee has a series of articles under the general title "Fifty Years On—Then and Now," and its impressive record of progress is summed up in an editorial which wisely draws attention to the present need to define the limits of the specialty in radically altered and rapidly changing conditions. "The attainment of a comprehensive chest service which will include respiratory tuberculosis and all other chest disease *integrated with other branches of medicine* must surely," the journal says, "be our aim, with prevention, diagnosis, treatment and after-care, including rehabilitation, coördinated as one continuous process."

At first sight few will dispute this policy; but it would perhaps be wise to examine its implications more fully before they become accepted as self-evident. The study of diseases of the chest is an established specialty and it should continue to be one: the subject, even without pulmonary tuberculosis, is quite large enough to justify a special compartment. But it cannot be assumed from this alone that a "comprehensive chest service" is desirable. Neurology is an accepted specialty; but a comprehensive neurology service has, as far as we know, not been suggested. Is there a place for a comprehensive heart service or skin service? The idea of a chest service does not appear incongruous, because it develops from an established and familiar institution—the tuberculosis service. But it is hard to believe that diseases of the respiratory system, other than tuberculosis, differ so much in social significance that they need a service that cannot be provided by the general hospital. If, as is hoped, the prevalence of tuberculosis decreases to such an extent that the resources of the chest clinics and chest hospitals become inadequately employed, it may be expedient to use them for purposes other than the prevention and treatment of tuberculosis. But it may not necessarily be right to do so. Before considering how chest clinics can best be employed, it might be profitable, though unpopular, to ask whether they should continue to exist at all, and whether the administrative stroke that attempted to turn "tuberculosis dispensaries" into "chest clinics" and "tuberculosis officers" into "chest physicians" was indeed a wise decision. The experience of the past fifty years has demonstrated the value of a comprehensive tuberculosis service; but those who advocate an equally comprehensive chest service must do more than rest their case on tuberculosis then and now.

PENICILLIN V

VARIOUS penicillins with different properties have been produced by changing the strain of the fungus, the conditions of growth, and the composition of the medium. So far, penicillin G has been the most widely used. A new type of penicillin, penicillin V, or phenoxymethyl penicillin, has been produced by biosynthesis by growing *Penicillium chrysogenum* Q176 in a culture medium containing a special type of nutrient.[1] Being an acid and acid-resistant, penicillin V passes through the stomach unchanged, unlike penicillin G, which is partially inactivated by acid, and is largely destroyed by the acid gastric juice if taken by mouth.[2,3] Oral absorption of penicillin G is variable and much larger doses must be given by mouth than by injection. Penicillin V is stable as the free acid, and, unlike the other penicillins, need not be prepared as a metallic or organic salt. It is dissolved and absorbed unchanged in the alkaline medium of the small intestine, and is therefore eminently suitable for oral administration. Broadly speaking, its antibacterial spectrum is identical with that of penicillin G, but it is said to be 60% more active than the latter against *Staphylococcus aureus*.[3] The two penicillins also differ slightly in their activity against *Micrococcus pyogenes*. Because of slight quantitative differences in their action on the test organisms in biological assay, the dose of penicillin V is best assessed by weight in mg. and not in units. 60 mg. of penicillin V is equivalent to 100,000 units of penicillin G by chemical assay.

After penicillin V has been given by mouth, the blood-levels are higher and more sustained than those produced by an equivalent dose of penicillin G.[4] An oral dose of 120 mg. (200,000 units) of penicillin V gives detectable blood-levels six hours after administration, although the level declines after four hours.[5] If this quantity of penicillin G is given orally, the blood-level is approaching zero after six hours.[6] The recommended dose of penicillin V is 120–240 mg. every four hours round the clock; but for convenience the last night dose can be doubled to avoid awakening the patient in the night. About 25% of an oral dose of penicillin V is excreted in the urine.[7] It is more sensitive to penicillinase than penicillin G, and therefore any that is unabsorbed when taken by mouth is destroyed in the lower part of the gut by organisms producing penicillinase. Like penicillin G, penicillin V does not readily penetrate the blood-brain barrier in normal subjects. It is possible, however, that it may traverse it if the meninges are inflamed, just as penicillin G does. Therapeutically effective amounts of penicillin V have been found to diffuse into the pleural and peritoneal cavities, and to be excreted into the bile.[8]

In the treatment of mild to moderate infections due to susceptible organisms, 120–240 mg. of penicillin V every four hours has been found effective. If the infection is severe, it may be necessary to use a higher dosage (e.g., 480 mg.), and to give it more frequently.[6] Reactions and sensitivity seem just as likely with this new penicillin as with penicillin G. Gastro-intestinal irritation with loose stools, no doubt due to altering the balance of the intestinal flora, has been reported.[6,9] Preliminary reports with penicillin V in this country have been encourag-

1. Brandl, E., Margreiter, H. *Österr. Chem. Z.* 1954, **55**, 11.
2. Parker, G., Cox, R. J., Richards D. *J. Pharm., Lond.* 1955, **7**, 683.
3. Brandl, E. *Wien. med. Wschr.* 1953, **103**, 602.
4. Martin, W. J., Nichols, D. R., Heilman, F. R. *Proc. Mayo Clin.* 1955, **30**, 467.
5. Proceedings of 3rd Annual Symposium on Antibiotics, November, 1955, Washington, D.C. To be published.
6. Jones, W. F., Finland, M. *New Engl. J. Med.* 1955, **253**, 754.
7. Wright, W. W., Kirshbaum, A., Arret, B., Putnam, L. E., Welch, H. *Antibiot. Med.* 1955, **1**, 490.
8. Martin, W. J., Nichols, D. R., Heilman, F. R. *Proc. Mayo Clin.* 1955, **30**, 531.
9. Hausmann, E., Zischinsky, H. *Wien. med. Wschr.* 1953, **103**, 725.

ing[10 11] and trials in Germany and Austria have shown its value by mouth, particularly in children.[12 13] It may be that many of the infections that have been treated with penicillin parenterally in the past may now be treated with penicillin V orally. In conditions in which higher blood-levels are needed (bacterial endocarditis, for example) the simultaneous administration of probenecid is an advantage.[8]

At the Annual Symposium on Antibiotics held in Washington last November a speaker from Sweden said that 40% of the penicillin used in his country was now in the form of penicillin V tablets, and another speaker said that in Austria 30% of all the penicillin administered was given as oral penicillin V. The drug has now been available in this country for several months.

STAPHYLOCOCCAL INFECTIONS AFTER CARDIAC SURGERY

POSTOPERATIVE sepsis is more common than is generally supposed; and, in spite of antibiotics, it may threaten the patient's life or at least his hope of a quick recovery. In some branches of surgery particular attention has been given to the prevention of wound infection: perhaps this is because the tissues concerned are especially liable to infection and because the results of sepsis after certain types of operation are unusually serious. It is certainly true that the literature on this subject has been particularly concerned with intracranial, orthopædic, and plastic surgery and with the treatment of burns.[14–17]

It seems that in the extending work of thoracic surgery similar problems are arising. Operations on the lung are often complicated by staphylococcal infection of wounds and intrathoracic spaces.[18] Fleming and Seal[19] now report 9 instances (5 of them fatal) of serious staphylococcal infection after operations on the heart or great vessels. 7 of the operations were for mitral valvotomy and 2 for division of a patent ductus arteriosus. An endocardial infection, demonstrated post mortem, was certainly responsible for 2 deaths and probably for 2 more. Auricular fibrillation, associated with a myocardial abscess, was the cause of another death. In the 4 surviving patients the clinical findings and positive blood-cultures suggested endocarditis. Coagulase-positive *Staphylococcus aureus*, alone or in association with *Streptococcus viridans*, was the organism responsible in 6 cases. It is particularly interesting that coagulase-negative *Staph. albus* was incriminated in the other 3. This organism was isolated from blood-cultures in each of these 3 patients, and in 1 it was also grown in pure culture from the mitral vegetations found at necropsy. It was resistant to penicillin, and the patient's serum contained antibodies against it. Fleming and Seal remark that failure to recognise the pathogenic rôle of *Staph. albus* in this case led to inadequate treatment of the infection.

Staph. albus is a common contaminant and is often ignored when isolated from blood-cultures. There is good reason for the general belief that this organism is of lower pathogenicity than the related *Staph. aureus* strains producing coagulase, but this is not to say that it cannot attack delicate tissues. Bacteriologists who see a profuse and pure growth of *Staph. albus* from cases of neonatal conjunctivitis may be easily convinced of this. The susceptibility of the damaged endocardium to infection with *Strep. viridans* suggests that this, too, is vulnerable to organisms of low virulence for other tissues, and it may well be that *Staph. albus* can also cause endocarditis. Fleming and Seal present good evidence, from their own work and from recent publications, that this is so.

They also discuss briefly the possible sources of infection in these 9 cases. They believe that the chief risk was at the time of operation, although preoperative intravenous manipulations may have played a part. They found that staphylococci were the main airborne organisms contaminating the surgeons' equipment and gloves, and these organisms may be introduced when a finger is put into the heart to dilate the mitral ring. Another risk, not mentioned by Fleming and Seal, is that digital manipulations in a tight mitral valve probably cause extreme stretching of the glove rubber and may open minute holes through which organisms from the surgeon's skin can pass. It has been shown that more than half the surgeons' gloves are punctured during lung operations,[18] and it would be interesting to know how often there is a puncture over the surgeon's finger after a mitral valvotomy. With so many new materials about nowadays, something better than rubber could possibly be found for surgical gloves; but in the meantime thoracic surgeons might enclose the gloved finger in a freshly sterilised stall of some impervious plastic material immediately before putting it into the heart. This might be preferable to Fleming and Seal's suggestion that prophylactic penicillin should be used to protect the patient against these infections.

ANTICONVULSANT ACTION OF ACETAZOLAMIDE

SHORTLY after the introduction of the sulphonamides into clinical practice it was observed that sulphanilamide[20] and the dye 'Prontosil S'[21] were able to reduce the frequency of convulsions in some epileptic patients. The sulphonamides are known to inhibit carbonic anhydrase[22] and thus produce acidosis, and it was thought that this acidosis was responsible for the anti-epileptic action, which was compared to the effect of the ketogenic diet. Because of the toxicity of the earlier sulphonamides this observation was not widely explored. Acetazolamide[23] provided a relatively non-toxic sulphonamide which was a powerful inhibitor of carbonic anhydrase, and it too has been used in the treatment of epilepsy in adults and children with, on the whole, favourable results.[24–26] There may be side-effects[24] and there are few cases in which acetazolamide is preferable to the standard anti-epileptic drugs. On the other hand, one child whose epilepsy took the form of intense periods of hyperventilation was much relieved by acetazolamide.[26]

Millichap and his co-workers in the University of Utah[27] have studied the mechanism of the anticonvulsant action of acetazolamide in mice. They confirmed that it prevented electrically induced seizures and was twice as effective in this way as sulphanilamide. Acetazolamide was a hundred times more effective than sulphanilamide as an inhibitor of carbonic anhydrase. Sulphathiazole, which does not inhibit carbonic anhydrase, did not prevent seizures in mice. Millichap et al. then found that both acetazolamide and sulphanilamide retained their

10. Dove, W. L. *Brit. med. J.* 1955, ii, 1090.
11. Bowerbank, A. G. *Ibid*, p. 1029.
12. Schindelmaisser, F. *Wien. med. Wschr.* 1953, **103**, 725.
13. Sinios, A. *Med. Klin.* 1954, **49**, 2031.
14. Cairns, H. *Lancet*, 1939, i, 1193.
15. Girdlestone, G. R., Bourdillon, R. B., McFarlan, A. M. *Ibid*, 1951, i, 597.
16. Spooner, E. T. C. *J. Hyg., Camb.* 1941, **41**, 320.
17. Colebrook, L., Duncan, J. M., Butterfield, W. J. H. *Lancet*, 1947, i, 321.
18. Blowers, R., Mason, G. A., Wallace, K. R., Walton, M. *Ibid*, 1955, ii, 786.
19. Fleming, H. A., Seal, R. M. E. *Thorax*, 1955, **10**, 327.
20. Yeoman, J. C. *Brit. med. J.* 1938, ii, 261.
21. Cohen, M. E., Cobb, S. *Arch. Neurol. Psychiat., Chicago*, 1941, **46**, 676.
22. Mann, T., Keilin, D. *Nature, Lond.* 1940, **146**, 164.
23. See *Lancet*, 1955, i, 706.
24. Merlis, S. *Neurology*, 1954, **4**, 863.
25. Bergstrom, W. H., Carzoli, R. F., Lombroso C., Davidson, D. T., Wallace, W. M. *Amer. J. Dis. Child.* 1952, **84**, 771.
26. Vivien, P. *Ann. Méd.* 1955, **56**, 95.
27. Millichap, J. G., Woodbury, D. M., Goodman, L. S. *J. Pharmacol.* 1955, **115**, 251.

full anticonvulsant potency after the mice had undergone bilateral nephrectomy. The anticonvulsant property of the sulphonamides seemed to be related to carbonic-anhydrase inhibition, but it was evidently not dependent on the production of metabolic acidosis. In fact further experiments showed that when acidosis was induced in mice by administration of ammonium chloride, only a very slight degree of protection against convulsions was conferred. Millichap et al. next turned their attention to carbonic anhydrase in the brain. They found that after administration of equivalent amounts of the two drugs sulphanilamide was present in the brain in a concentration fifty times greater than that of acetazolamide. Since acetazolamide was one hundred times more powerful an inhibitor of carbonic anhydrase, it was evident that after equal doses acetazolamide would exert twice the degree of enzyme inhibition. This corresponded with the observation that acetazolamide was twice as effective as sulphanilamide in the prevention of seizures. Moreover, the two drugs had their strongest anticonvulsant action at a time when the inhibition of carbonic anhydrase was greatest.

It is not yet clear in what way inhibition of carbonic anhydrase in the brain prevents convulsions. Not all anticonvulsant drugs act in this way, since phenobarbitone, phenytoin, and troxidone do not inhibit carbonic anhydrase.[27] Inhibition of carbonic anhydrase leads to the accumulation of carbon dioxide at the nerve-cell membrane, and the resulting decrease in the velocity of conduction of impulses may be related to the lowered susceptibility to convulsions. Further research is proceeding on this subject, and meanwhile it has again been demonstrated that acetazolamide is a valuable tool in the study of fundamental cellular mechanisms.

SALMONELLÆ OFF THEIR BEAT

DURING a period of three months salmonella infections were acquired by 5 hospital patients. Investigating these cases, Kunz and Ouchterlony[28] found the source of the organisms in a previously unsuspected food-product —namely, dried brewers' yeast. Each of the 5 patients had been fed by stomach-tube. In the wards and diet kitchens concerned, none of the staff were carriers of salmonellæ, and attention was turned to the tube-feeds. At the time of the infections the preparation of the tube-feeds did not include boiling or heating of the ingredients or of the finished product. Dried yeast and spray-dried milk powder were common to all the feeds given to the infected patients, and (rather unexpectedly) the yeast it was that showed the presence of salmonellæ on culture.

To culture salmonellæ from the yeast it was necessary to examine large samples, each of from 50 to 100 g., and to leave them in contact with 200 ml. of water, saline, or broth for from six to twenty-four hours at 30–37°C before culturing. Several 1 or 2 ml. aliquots of the suspension, each in 10 ml. of selenite and of tetrathionate broth, were taken for culture and thereafter the ordinary procedure was followed. Examination of small samples without preliminary "hydration" gave negative cultures from batches of yeast subsequently proved to contain salmonellæ. The way in which the yeast became infected during manufacture was of interest because yeast is only one of many dried foods all of which may be subject to the same hazards. Salmonellæ were not found either in the equipment or in yeast from the culture tanks, separators, holding-tanks, drying-drums, or intermediate conveyors. It was only during the final stages of milling, screening, and packing that salmonellæ were occasionally found. Finally, it was established that the bacteria were being introduced into the factory through a ventilating duct; and when the incoming air was filtered the contamination ceased. It is very likely, although not proven, that the ultimate source of the salmonellæ was the excreta of animals. This speculation is of particular interest in view of the report by Rohde[29] of an outbreak of salmonella infection in Hamburg, in 1954, which was traced to pastry, the original source of the infection being apparently wheaten flour from a mill heavily infested with rats and mice.

A third unexpected vehicle for the transmission of salmonellæ was recently discovered in Melbourne by Wilson and Mackenzie[30] who, investigating an outbreak of typhoid fever, found a variety of salmonella species, including *Salmonella typhi*, in desiccated coconut produced under very primitive conditions in Papua and imported into Australia.

Knowledge of these unexpected sources of salmonellæ may help and even stimulate day-to-day inquiries into food-poisoning incidents. But the main burden of the problem of food-poisoning lies in discovering how to control the familiar sources of infection. One useful lead in this connection is the evidence produced by Anderson and Stone[31] that spray-dried milk manufactured in warm weather, especially near the end of a day when the equipment needs cleaning, may actually contain not only abundant staphylococci but, in all probability, their pre-formed toxin also, which is well preserved by drying.

A useful and comprehensive survey of many other and more familiar problems of food-poisoning was given by a group of distinguished contributors to a symposium on Food Microbiology and Public Health which was held at Cambridge last July by the Society for Applied Bacteriology.[32]

THE USE OF AN AMBULANCE

IT is reported[33] that an ambulance service refused to carry a doctor, a nurse, and drugs to help a patient who had collapsed in his home. The reason given was that an ambulance is provided, according to the regulations, "to convey patients where necessary," and that it is not the duty of the ambulance service to convey doctors and drugs. A neighbouring ambulance service undertook the task, apparently on the principle that it is better to do what appears necessary, and to make inquiries afterwards. It may well be that a private car or a taxi could have been used, and this was pointed out at the time; but many people will be left with the feeling that regulations were interpreted too strictly on this occasion. Of course the organisation which sticks most carefully to its regulations is most likely to seem efficient in the eyes of authority; but it will rarely be able to react quickly to the unexpected situation for which no regulations provide. Those who declined to respond to this call for an ambulance may say that "urgent" calls are often exaggerated and sometimes unnecessary, and that speed is seldom as important under these circumstances as many people believe. Certainly this particular patient died in a few hours, and there was probably nothing more that could have been done to save him. But that is hardly the point: there should be no doubt in anybody's mind that the utmost has been done for a patient, and the facts reported in this case will not dispel all doubts.

28. Kunz, L. J., Ouchterlony, O. T. G. *New Engl. J. Med.* 1955, **253**, 761.
29. Rohde, R. *Arch. f. Hyg. u. Bakt.* 1955, **139**, 148.
30. Wilson, M. M., Mackenzie, E. F. *J. Appl. Bact.* 1955, **18**, 510.
31. Anderson, P. H. R., Stone, D. M. *J. Hyg., Camb.* 1955, **53**, 387; see annotation, *Lancet*, Feb. 4, 1956, p. 240.
32. *J. Appl. Bact.* 1955, **18**, 462.
33. *Liverpool Echo*, Jan. 16, 1956.

Special Articles

UNDERSTANDING THE DEPRIVED CHILD *

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MANY children who are deprived of a normal home life find it difficult to adjust to their altered circumstances. They have to cope with new and perhaps frightening problems which have arisen from the breakdown of their family life, and they need help. I am convinced that, however efficient the organisation for taking them into care, and however comprehensive our legislation to safeguard their welfare, we really begin to help them only when we get down to understanding the individual child and his problems.

There is something oddly uniform in the manner and behaviour of these children. As the following examples show:

An 11-year-old girl, who has been in care since the age of 2, is described as "sullen, reticent, and suspicious. At times she is very destructive. She has frequent outbursts of violent temper, and her behaviour in general is unpredictable."

A 9-year-old boy, who has lived in several residential homes and for a time with foster-parents, is described as "aloof and taciturn, solitary and resentful. He had been caught stealing money from the foster home on several occasions and always lied blatantly about these thefts. They had never succeeded in overcoming his aloofness. He was always mistrustful and wore 'a chip on his shoulder.' If reprimanded, he would have a temper tantrum."

It is true that not all deprived children behave in this way, and it is equally true that by no means all children with such conduct disorders are technically deprived; but it is a recurring pattern among deprived children. Why do they behave in this way? Why are they so aloof and sullen and moody? Why is it so difficult to get close to them? Why are they so suspicious and unresponsive?

BACKGROUND OF DEPRIVATION

During his formative years a child, whether deprived or not, has certain basic needs, including adequate nourishment, clothing, and shelter. Equally vital is the child's need for constant affection, and for a feeling that he belongs securely within a family group. In the early years of life, this demand for affection is fundamental. It is also highly selective, because it is the love of his mother that the child needs, or, in default of the mother, a substitute but constant mother-figure.

When young children are sent to hospital they are usually separated from their mothers, though only temporarily and usually for a short time. While in hospital, they receive expert and kindly attention; yet, unless we take precautions some of them will so miss the indispensable relationship with their mothers that they will fret and show emotional upset. Some fret openly and are inconsolable in their tears. Others fret inwardly, becoming quiet and withdrawn, and morose.

If normal young children can be adversely affected by a temporary loss of contact with maternal warmth and security, how much greater must be the effect on the deprived child whose loss is lengthy or permanent. Consider how such a child must feel. His security may already have been undermined by the disrupting influence of a broken home. He may be struggling to overcome an engulfing wave of grief, from the death of a parent. He may be confused, and bewildered in his loyalties, by the desertion of a feckless father or the defection of a deficient and selfish mother. He may have been rejected and cast out at birth as an illegitimate and unwanted child, so that he has never known the warmth of maternal affection or the security of belonging within a family unit. Often, such a child has suffered repeated rebuffs from parents or guardians, who have rejected him, sometimes shamelessly, or perhaps neglected him in ways more subtle but equally damaging. When he comes into care, he appears withdrawn and unresponsive. His feelings may have been hurt so many times that he has learnt to protect them by a taciturn and sullen mask.

Many of these children have been let down again and again by unreliable parents, or misled repeatedly by false promises. They feel suspicious and mistrustful of adults. Our assurances, given in good faith, may have been heard before by the child, when they were not fulfilled. How can he feel sure that this time he can accept them? His suspicions and hostility, his withdrawal and moodiness, are surely understandable.

Slowly, however, we overcome his suspicion and we think he is beginning to trust us and give his confidence to us. Many of these boys and girls do respond in this way; but to our dismay—and even, let it be said, to our righteous indignation—there are some who bite the hand that feeds them, who repay kindness with aggression, and who take advantage of our tolerance by abusing privileges and by provoking disturbances. How can we explain this phenomenon?

When I am trying to pacify outraged foster-parents, who complain bitterly about this sort of behaviour, I ask them to imagine that for years they have had to use a bridge to cross a dangerous river which separates their house from their shopping centre. The bridge is solid and they have long since lost any qualms about committing their safety to it. Then one day, during a violent storm, the bridge is struck by lightning while they are crossing, and they are pitched into the water. The experience is highly unpleasant. When they have recovered, and resume their daily journey, they find a new bridge in place of the old one. It looks unfamiliar, not as solid or secure as the original one, and they naturally feel some misgivings about committing their weight to it. They could hardly be blamed if, as a precaution, they were to test the stability of the bridge beforehand, by shaking it or perhaps kicking it, and only when they were satisfied that it could stand such punishment would they feel safe about crossing.

These difficult children have been subjected to one upheaval after another and they have become understandably wary. We, in our turn, set ourselves to convince them that they can safely open up their badly wounded feelings to us. But the child must be sure of his support before he does so. He is perhaps near the end of his emotional tether, and to be let down again might mean complete emotional breakdown. Almost unconsciously, therefore, he is driven to test the support which is offered to him before he commits himself to it, and this is the basis of his provocative behaviour. If he is loved while he remains coöperative and obedient, will he still be accepted when he is naughty and disobedient? No child (or adult) likes to feel that he is loved, or that he is wanted, only on a selective basis. We all like to feel that somewhere there is a place where we belong and where we will find unstinted affection, no matter how badly we behave.

These children are groping blindly to achieve this aim. And the only way they can allay their gnawing suspicions is deliberately to provoke adverse circumstances, so that they can judge the reaction of those who promise security. If they are accepted when they are badly behaved, they can, they feel, safely put their trust in the security offered.

NAUGHTY OR WITHDRAWN

As I have said, not all deprived children behave in this way. For that matter, not all young children who are

* Abstracted from an address to the annual conference of the Association of Children's Officers, Southport, Sept. 29, 1955.

admitted to hospital suffer emotional upset. Much depends on the constitution of the child. Some have a more robust make-up than others, and can thereby withstand emotional deprivation with less adverse effect. Their reaction depends, too, on the quality of their previous relationship with parents or guardians. Moreover, if an earlier separation has been mishandled the child will naturally tend to react more violently to a second separation, because he is pre-judging it in terms of the last time.

We need some means of sorting out these various types of case—the long-term from the short-term emotional disturbance; the stable from the unstable; those likely, from their past experience, to settle down readily from those in whom we can expect a turbulent reaction. Having screened them in this way, we need the administrative means to place each child according to his particular emotional requirements. We need, in fact, a reception centre in each area. The success of such a centre will depend on the understanding and insight with which the staff handle these children, and the staff must therefore be carefully selected and specially trained.

It is not only the difficult child who may be emotionally disturbed. Deprived children are too often judged by their nuisance value. If they create no disturbance socially in their environment, it may be falsely assumed that they have settled down. Yet some children who suffer serious emotional disorder, because of their personality make-up, are unable to express their feelings outwardly. Instead, they "bottle up" their emotions within themselves, and so tend to withdraw into a state of dreamy detachment and apparent apathy, which may readily be mistaken for evidence that they have equably accepted their substitute home. Such children "take it out" of themselves instead of "taking it out" of their environment. Because they abstain from provocative behaviour and appear quiescent, it does not follow that they are less disturbed than their more aggressive fellows.

REAL PARENTS AND FOSTER-PARENTS

We are familiar with the economic and social conditions which contribute to the disruption of the family unit—unemployment, overcrowded houses, ill health, the death of a parent, and so forth. It is perhaps not so widely recognised that the stability of family life may be seriously undermined by emotional factors, especially adverse emotional experiences in the early childhood of the parents. A father or mother who has been deprived in childhood may lack the security and maturity to foster lasting family ties. Unwittingly such parents perpetuate in their own children the faulty attitudes of which they originally were victims as children. Emotional deprivation, which we recognise as an effect of family breakdown, may also be one of its causes. If we are to prevent the dissolution of family ties, we must give as much attention to this cause as to the more obvious social factors. We must try to rehabilitate these problem parents to avoid another generation of problem children.

Much has been said and written about the paramount importance of keeping the family together, but in my experience far too many children are removed from their homes because of material conditions. If it is true that adverse emotional factors can disrupt the solidarity of the home, it is equally true that positive emotional factors can do much to offset material degradation. No matter how deplorable the physical conditions, and how severe the material privations, where there is strong family affection and close emotional bonds we should never break up that family with the sole object of improving its living conditions. Children will tolerate incredible conditions of material deprivation so long as their emotional ties remain intact. Conversely, they will fret and become emotionally disturbed, no matter how much we improve their physical surroundings, if in the process they are emotionally deprived. By all means, let us try to upgrade their living conditions, but always on the foundation of preserving the family unit.

If a child has to be taken into care our aim should be to maintain constancy throughout the period, and to avoid disturbing changes in his surroundings and in his new relationships. To this end, it is important to make one officer responsible for the child. Whatever decisions are taken for the child's welfare, this officer should carry out these procedures direct with the child, and interpret to him the decisions taken on behalf of the department.

Similarly we should, as far as possible, avoid moving children from one home to another. Once they are placed in an environment, chosen to meet their particular needs, every effort should be made to keep them there, so that they learn to achieve the sense of belonging which is so vital to their well-being.

To avoid distressing change we must prepare the ground carefully with prospective foster-parents, before asking them to accept the care of a potentially difficult child. It is not enough to be satisfied that the foster-mother is a stable and kindly soul, that she has warm maternal instincts and personal integrity, and that she maintains a good standard of hygiene and cleanliness in her home. These qualities are necessary, but it is equally important to make sure that she has the capacity to understand the child's emotional difficulties and to tolerate his provocative behaviour, should it develop. It is vital to find the right foster-parents for a particular child. Having found them, it is as important to stand by them with encouragement and support, in order to help them to surmount the initial period of adjustment, because at this stage the child may begin to test them. It is unfair to them and the child to leave them to cope unaided without regular guidance and technical advice.

In my hospital department I bring together a group of these foster-mothers, who are each having to contend with similar problems. We meet regularly, and we thrash out together the difficulties which have arisen in the day-to-day conduct of the children in their charge. There is no doubt that it helps them enormously to discuss their individual problems in a group. They take fresh heart at finding that other people have to face similar problems, equally provoking; and by discussion, with my prompting, they come to a deeper understanding of these deprived children, and they learn how to modify their own attitudes.

CONCLUSION

When deprived children present problems in their behaviour, or in their failure to conform within a given environment, we must interpret their conduct in terms of their past experience and emotional make-up: we must remember the emotional stresses to which they may have been subject, and we must not judge them by our standards, because we are looking in on them from the outside, as secure and well-adjusted observers, while they are looking out at us from the inside, from a private world very different to ours—a world fraught with insecurity and doubt.

When they resort to provocative behaviour in their efforts to test their new relations, we must remember that they are prompted, not by reason or by cold logical thinking, but by deep-seated emotions of which they may be only dimly aware, and certainly not able to control without our help. If we fail to provide for them the emotional haven which they need, the consequences may well be far-reaching for society and for the child. If we succeed, our reward is the child's return to the ranks of well-adjusted society.

REMUNERATION OF DOCTORS

IN GENERAL PRACTICE AND IN HOSPITALS

WE have received the following letter:

SIR,—The rise in the cost of living hits everyone in the country, but does not affect different classes of the community equally. Wages and many salaries have, by and large, fully kept pace with this rise. Some fortunate people have been able to offset the combined incidence of declining money values and high taxation by appreciation in capital values. Others have not been so fortunate. Amongst the worst sufferers are those whose incomes are determined and changed infrequently, and doctors, the great majority of whom are now remunerated almost entirely from public funds, fall into this group.

The cost of living has risen steeply since 1950 and the real value of the incomes of general practitioners and hospital medical staffs has declined. The medical profession during these difficult years has been reluctant, in view of the national situation, to draw attention to its own financial position. It is, however, now compelled to claim from the Government increased remuneration for both general practitioners and all grades of hospital medical staff. A detailed statement setting out the background of the case accompanies this letter.

When Parliament introduced a State-provided National Health Service, it thereby assumed the responsibility for maintaining an adequate standard of living for the doctors who play an essential part in it. What we are now asking is not merely that the value of professional remuneration should be restored, but the recognition of this responsibility in principle and its embodiment in policy.

A. TALBOT ROGERS
Chairman,
General Medical Services Committee.

W. RUSSELL BRAIN
Chairman,
Joint Consultants Committee.

Statement

So far as the medical profession is concerned, the basis of remuneration in the National Health Service has been, and still is, the two Spens reports which were accepted by the profession and the Government. The Spens Committees framed their recommendations in terms of 1939 values of money, and, to quote from the General Practitioner report, "left to others the problem of the necessary adjustment to present conditions, observing that such adjustment should have direct regard, not only to estimates of the change in the value of money, but to the increases which have in fact, taken place since 1939 in incomes in other professions." A similar safeguard was included in the Consultant Spens report.

In the field of general practice there has been no "adjustment" since 1950. It is true that since the Danckwerts award the method of calculating the Central Pool safeguards the level of income in so far as practice expenses and the number of doctors taking part in the Service are concerned, but this takes no account of variations subsequent to 1950 in the betterment factor, which is still assessed at the level of 100% over 1939. This level is certainly an unrealistic figure today.

In the hospital service, although medical staff are now remunerated under a later award of 1954, they are in the same position, as they too have received no increase in the betterment factor since 1950. During the negotiations which led up to the 1954 award, the Government refused to accept any claim based on betterment, and the settlement which was reached was on the ground that the Danckwerts award had disturbed the relativity between general practitioners and consultants (previously established by the two Spens Committees) and that an increase in consultant remuneration was necessary to safeguard recruitment to that branch of the profession.

Since the Danckwerts award established a betterment factor of 100% for general practitioners in 1950 and the consultant award of 1954 restored the balance between the two branches, it follows that the remuneration of both sections, in so far as the betterment factor is concerned, was stabilised as at 1950. To put it another way, general practitioners and hospital medical staff are now remunerated at rates which, so far as values of money are concerned, are related to the year 1950 and any adjustment to offset changes which have occurred since that date must apply to both branches of the profession.

In the past, negotiations in the field of remuneration have been carried out independently by the General Medical Services Committee of the British Medical Association, representing general practitioners, and by the Staff Side of Committee B of the Medical Whitley Council, representing hospital medical staff. This was perhaps inevitable because in previous claims the factors in dispute were not common to both fields. The present issue is, however, straightforward. It is that the existing rates of remuneration must be adjusted to meet the decline in the value of money since 1950. Since both branches are affected by this decline there is every advantage to be gained from a joint approach to the Government. Experience has shown that any claim submitted on behalf of one section of the profession would be examined by the Ministry not on its merits alone but also on its possible repercussions in other fields of practice.

These matters have been carefully considered by the General Medical Services Committee and the Joint Consultants Committee, and both feel that, with a continuing inflationary trend and in the light of the increases afforded to or claimed by other sections of the community, they have no option but to take immediate steps to remedy the disadvantageous position in which general practitioners and hospital medical staffs now find themselves.

Both committees are equally convinced that it is in the best interests of all that a joint claim should be made with the full weight of the profession behind it. This view has been endorsed by the council of the British Medical Association and by the Joint Consultants Committee.

In consequence, the Minister of Health has been informed by the General Medical Services Committee of the British Medical Association, representing general practitioners, and the Joint Consultants Committee, acting on behalf of all grades of hospital medical staffs, of the intention to submit an early claim for an increase in the betterment factor.

The preparation of the joint claim is now under way and for this purpose a Joint Negotiating Committee of the two bodies has been set up under the joint chairmanship of the chairmen of the General Medical Services Committee and the Joint Consultants Committee. It will be assisted by Prof. R. G. D. Allen, D.SC., professor of statistics of the University of London, whose evidence played an invaluable part in the Danckwerts adjudication.

The Public Health Committee of the British Medical Association has been kept informed of these developments, and its chairman has been invited to be present at the meetings of the Joint Negotiating Committee referred to above.

It will be appreciated that the submission of a precise claim must depend largely upon the availability of accurate statistical information and we are advised that this will not be ready until the end of April. In the meantime all the necessary preparations are in hand.

Finally, it is wished to emphasise that this is not a claim for new money. Indeed, it is not a claim for anything more than the remuneration which the Spens reports laid down to be proper for the medical profession. The decline in the value of money has meant that the profession during the last five years has not received what was regarded as its due when the Spens reports were accepted by the Government at the inception of the National Health Service. What is asked is that this obvious injustice should now be made good.

In the Mental Hospital *

FACTORY IN A HOSPITAL

A. A. BAKER
M.D. Lond., D.P.M.
DEPUTY PHYSICIAN-SUPERINTENDENT, BANSTEAD HOSPITAL, SUTTON

A POLICY of providing work, under factory conditions, for patients in mental hospitals would have far-reaching consequences. In this article I shall offer some personal reflections based on experience at Banstead Hospital, where an experimental workshop established by a Medical Research Council unit now employs 40 women and 20 men.

WORKING CONDITIONS

We needed to find floor space where a considerable number of patients could work under supervision, and we sought the advice of the local Factory Inspector, who visited the hospital to see the rooms available. The most suitable site was a large ward, 80 × 30 ft., which had provided sleeping accommodation for 60 patients. Following an active treatment, rehabilitation, and discharge policy, there were sufficient vacancies on other long-stay wards to enable this dormitory to be cleared. It had adequate lighting, and tables were provided from the hospital workshop by converting old bench-type tables which had been turned out of the wards when modern furniture was introduced.

The men do piece-work for a motor factory, and the women assemble cardboard boxes; and over a 25-hour working week they have been able to earn between 10*s*. and £2 weekly. This may seem a low scale of pay, but it is more than patients can earn by ordinary hospital work such as floor-scrubbing, laundry work, needle work, or ward chores, where pay ranges from 1*s*. to 5*s*. a week. This has led to immediate repercussions in that many of the better workers in the hospital departments have become discontented and wish to move to what is called "the box factory." We have therefore decided that the conditions on which a patient goes to the box factory shall be (1) that he has been an inpatient for several years; (2) that there is a reasonable possibility of his being discharged from hospital; and (3) he should have proved his stability and willingness to work by a period of useful service to the hospital departments. It has been realised that patients doing hospital work have been paid too little and the upper level of pay for hospital work has been raised to 10*s*. We hope that the deteriorated psychotic patients on the long-stay wards, who in the past may have spent years sitting in corners, can now be persuaded to do elementary chores in the ward under supervision. When they have succeeded at this employment they may be tried outside the ward, with less supervision. If this proves successful they can then move to one of the hospital utility departments, such as the laundry or linen-room, and after a successful period of work there, can go to the box factory, from which the next step is to leave hospital for ordinary employment.

The nurses have shown some ambivalence towards the project. Many have been sceptical and felt that factory conditions could not be reproduced within hospital or would fail for lack of coöperation in the patients. We are pleased to record that almost all patients have proved far more successful than expected. Some ward sisters, understandably, were anxious lest their best ward workers would be taken away and given factory work. Again this fear has been largely unjustified, for we have always found it possible to replace the ward workers who have gone to the factory by other patients within the ward. There is no doubt that if a patient gets the reputation of being a good ward worker this may prove a disadvantage both to him (or more probably her) and to others on the ward. She may unconsciously settle down to a routine where she receives a fair amount of reward and approval for her efforts and therefore be less likely to make the effort to get out of hospital. The other patients have less incentive to work, since the work is done for them. Thus removal of the good ward worker may lead to fresh progress among others who were previously considered unemployable.

EARLY RESULTS

One problem which will soon have to be faced is that many patients working in the factory find that their way of life is highly satisfactory. They receive all the benefits of hospital life—full privileges, board and lodging, clothing, television shows, social outings, and even summer holidays. They are now able to work under pleasant conditions and receive considerable pocket-money. Many could well say to us that they cannot obtain such situations for themselves outside hospital and be reluctant to leave. However, this has not happened so far. Of the first 20 patients who went to our factory some four months ago, 3 have already left hospital. The length of stay in hospital of these 3 patients was nineteen, twenty-four, and four years. All have gone to full-time employment under normal working conditions.

The improvement in the patients who have been working in the factory is obvious. Apart from the 3 who have already left hospital to return to the community, several who were previously on disturbed wards have moved to better wards and others have earned more privileges. Ward sisters spontaneously say that these patients take more pride in their appearance, have more self-confidence, and are showing a fresh interest not only in their life in the hospital but in the possibilities of leaving. This is true of patients who were considered "institutionalised" and for whom the prognosis under ordinary hospital conditions had been very poor.

NEW USES FOR OUR MENTAL HOSPITALS

There are eight other large mental hospitals within a few miles of Banstead Hospital, and I estimate that together the mental hospitals of the area contain several thousand potentially employable people. In the present state of employment, when there are more jobs than people and when firms are willing to offer piece-work, it is relatively easy to arrange work-therapy for the hospital patient. If the hospital system were reorganised so that work-therapy replaced the traditional occupational therapy, there might be disastrous results should under-employment cease; and we must not forget that the factory work introduced into some mental hospitals in the early 1930s was abandoned during the economic depression. On the other hand, it is clear that the desire to create normal living and working conditions for mental patients is part of the general trend towards their more humane treatment; and on this if no other ground our work-therapy policy should be continued.

If many patients prove their ability to work at a level which will enable them to be self-supporting outside hospital, we shall have to face another social problem. Only a third of these long-stay patients have any known relative, friend, or contact outside hospital, and this means that when they are well enough to leave hospital it will be necessary to find for many of them accommodation as well as work. Even with the improvement in housing in the past year or two it is still difficult for a healthy and active person to find satisfactory lodging, and for our long-stay patients, whose initiative and drive is diminished, it will be an even harder task. We feel,

* A group of articles chiefly concerned with the value of active occupation and work for mental patients and the means whereby it is best provided.

therefore, that together with a work-therapy project, such as we have started at Banstead, we shall also need to have hostel accommodation in our catchment area, near to centres of industry, where patients who have left hospital can live.

Even in the past year our increased interest in long-stay patients and their problems, together with active treatment programmes for them, has shown that a considerable proportion can become well enough to leave hospital. We feel that with the new techniques available we shall be able to discharge these patients much faster than was possible in the past, and that the large buildings and overcrowded wards which we have known for so many years will then become obsolete. It would not seem impossible, in a hospital of this size, to discharge long-stay patients at the rate of 100 a year, and this would mean that in twelve years the patient-population at Banstead could be halved. To build new hospital accommodation would seem unnecessary; and the old buildings we have, though unsatisfactory in so many ways, can be put to good use. The large barn-like wards, which have been so seriously criticised of late, may find a fresh function. Perhaps, in the future, they may be adapted from custodial care to factory floor space. At present we have one ward out of forty which is working as a factory: perhaps in twelve years we could have twenty wards for factory use and twenty left for ordinary treatment purposes. Some ex-patients would then return to hospital in the daytime for the sheltered factory employment they need.

Although the symbolic walls around our mental hospitals are being removed and the gates opened, there are still barriers in the minds of the community. We may be willing to discharge our patients, but this does not mean that the community is willing to accept them. Psychiatric treatment should not be concerned only with the immediate care of the patient but should also consider the major social influences in the community at large. In many of our difficulties there is the same underlying, and as yet unanswered, question. Does the community wish to keep its mentally sick, for whom there is no immediate active treatment, locked away, with someone else responsible for their care, and financially supported? Or is the community prepared to accept the long-term patient in its midst, self-supporting, but an occasional source of embarrassment?

I wish to acknowledge the help and encouragement given by Dr. E. P. H. Charlton, physician-superintendent at the hospital. I also want to acknowledge the work and coöperation of the nursing staff.

Public Health

Poliomyelitis Vaccine

AN "aide-memoire" prepared by the Ministry of Health for the information of medical officers of health gives some further details about the poliomyelitis vaccine to be used in this country.

The Salk vaccine used in the United States of America is made from a mixture of pools of the three known types of poliomyelitis virus grown in a special tissue-culture medium (Connaught no. 199 medium) containing monkey-kidney tissue. Animal serum is added during the growing-out phase of the culture. This medium also contains penicillin and streptomycin, which during subsequent processing are to a great extent inactivated. The cultures are filtered and the virus inactivated by formaldehyde, this inactivating agent being added to a final concentration of 1 in 4000. Three tissue-culture tests are made to determine the rate of inactivation. The pH of the mixture and the temperature of the inactivation process are also carefully controlled. A bacteriostatic agent, merthiolate, together with 'Versene,' is added to the vaccine. Filtration before and at stages during the inactivation process are considered important steps in ensuring a safe vaccine by the removal of particulate matter. The strains of the three known types of poliomyelitis virus used in Salk vaccine are type I, Mahoney; type II, M.E.F. 1; and type III, Saukett.

The Salk-type vaccines of the two manufacturers in this country are similar but the component strains of poliomyelitis virus are different. In the Glaxo vaccine the strains are type I, Enders modification of Brunhilde; type II, M.E.F. 1; and type III, Saukett. (The types II and III in this vaccine are the same as those used in the Salk vaccine.) In the Burroughs Wellcome vaccine the strains are type I, Enders modification of Brunhilde; type II, attenuated Y-SK; and type III, attenuated Leon. Final formal approval has not yet been given in respect of strains type II and III used in the Burroughs Wellcome vaccine.

On the subject of safety tests, the aide-memoire says:

"During and after inactivation each monovalent bulk strain pool is tested for active virus by tissue culture methods. Not less than two tests are made during inactivation at 37°C on samples of 500 ml. taken at intervals separated by at least three days. The consistency with which manufacturers obtain negative results in tissue-culture safety tests on strain pools is a major factor in determining safety.

"The final vaccine, prepared by pooling monovalent bulk strain pools which have passed the prescribed tests, is again subjected to test. A sample of at least 1500 ml. is tested similarly by tissue culture methods. In addition a monkey safety test is applied to a sample drawn from the final containers. This safety test is made on healthy rhesus monkeys which have been treated with cortisone to make them more susceptible to infection with poliomyelitis virus. Each monkey is injected intraspinally and intracerebrally and is observed for 28 days when it is killed and histological sections are examined from the central nervous system. The number of monkey safety tests made is determined by the number of filling lots of the batch of the vaccine."

The vaccine is also tested for the absence of other pathogens for man (e.g., *Mycobacterium tuberculosis*, virus B, and lymphocytic-choriomeningitis virus).

Antigenicity tests are made on monkeys and on mice. Other rodents such as guineapigs, hooded rats, and cotton rats are being tried for this purpose.

Theoretically," the aide-memoire continues, "in view of the presence of monkey kidney protein in the vaccine, sensitisation to it and the production of Rh. antibodies are possible but the extensive use of Salk vaccine in other countries indicates that these theoretical possibilities are of little practical importance."

The W.H.O. group which met last November "considered that the amounts of penicillin and streptomycin in the poliomyelitis vaccine were so small that the danger of sensitisation to these antibiotics as a result of vaccination was very small. Nevertheless the possible effects of sensitisation and of vaccination in a sensitised person must be kept in mind, although no reactions of this nature have been mentioned in reports from official sources in the United States, Canada, and other countries which have supplied information on their experience with poliomyelitis vaccine."

"Where advice is asked as to whether other immunising procedures should be undertaken simultaneously with vaccination against poliomyelitis, it is probably reasonable to suggest the postponement of smallpox vaccination and other immunisation for at least a fortnight."

Parry of Bristol

For more than a quarter of a century Robert Hughes Parry has been medical officer of health for Bristol; and now he has gone to be visiting professor in public health at Yale before becoming (so he says) a farmer at Criccieth. He came to public health after three years in cancer research at the Middlesex Hospital and a further three years in general practice in North Wales with his wife, Dr. Joan Parry. From that time onwards, there has been nothing dull in his conception or his practice of preventive medicine, for he has believed in things and has said so strongly, vividly, humanly. He believes that "if it is to fight disease effectively, the medical profession as a whole needs in fact to be more than interested in the social services that are fighting the other giants of the Beveridge report"—Want, Ignorance, Squalor, and Idleness, as well as

Disease. He believes in local government and in a real, everyday, practical, partnership of local authorities with family doctors in the care of the sick: which is why Bristol can show so interesting a group of clinics and potential health centres—the latest (the fifth to be built since the war) opened only the other day. He has stood always for the integration of medical work and has often been able to make it a reality. Long ago, as professor of preventive medicine and M.O.H., he was offering chemical and bacteriological services to practitioners; he coördinated the school services with those for maternity and child welfare; and under his inspiration the city was developing its hospitals with consultants and specialists drawn from the voluntary hospitals. Latterly he has tended to think of the future M.O.H. as increasingly an epidemiologist in the wide sense, and characteristically has acted on this thought by arranging for a medical statistical section to be set up as a joint venture of the city and university. During the war and again in 1951 he visited America, and in 1949—the year of his presidency of the Society of Medical Officers of Health—he spent four months in Greece as expert adviser to the American Mission. Looking at Parry, one sees that public health is the career for excitement.

Influenza

Laboratory confirmation has been received of virus-A influenza in the Stowmarket area. There is similar confirmation in cases in the Camberley area, in a school outbreak at Otley, Yorkshire, and in an army unit at Caterham. Influenza-like outbreaks continue to be reported from other areas. Among these are outbreaks in two public schools—one in Berkshire and one in Lancashire. There are indications of an increasing spread of virus-A influenza in many parts of the country but, on the whole, cases have been clinically mild, and the weekly claims for sickness benefit have not been much affected.

Third Quarter in England and Wales

The Registrar-General has already published some preliminary figures for the September quarter of 1955.[1] A more detailed analysis[2] has now appeared. There were 3493 notifications of poliomyelitis in the quarter and the death-rate was 9 per million population. In the corresponding quarter of 1954 there were 880 notifications, with a death-rate of 4 per million population. Tuberculosis notifications in England and Wales totalled 9239 compared with 10,204 in the same period of 1954. The tuberculosis death-rate was 116 per million population, as against 146 per million the year before.

1. See *Lancet*, 1955, ii, 922.
2. Registrar-General's Return for England and Wales for the quarter ended Sept. 30, 1955. H.M. Stationery Office. Pp. 20. 1s. 6d.

Infectious Diseases in England and Wales

Disease	Week ended January			
	7	14	21	28*
Diphtheria	9	4	10	4
Dysentery	696	687	890	867
Encephalitis:				
Infective	..	1	3	5
Postinfectious	1	3	3	..
Food-poisoning	122	124	293	92
Measles, excluding rubella	3230	2368	1960	2130
Meningococcal infection	27	33	29	31
Ophthalmia neonatorum	23	26	31	35
Paratyphoid fever	8	9	10	4
Pneumonia, primary or influenzal	850	897	796	836
Poliomyelitis:				
Paralytic	41	35	23	21
Non-paralytic	18	24	16	10
Puerperal pyrexia	259	209	245	263
Scarlet fever	740	714	1035	964
Smallpox	..	..	..	..
Tuberculosis:				
Respiratory	517	574	668	700
Meninges and C.N.S.	8	9	11	19
Other	72	67	65	83
Typhoid fever	1	..	2	2
Whooping-cough	1130	1269	1422	1537

* Not including late returns.

Parliament

Hospital Farms

REPLYING to a short debate in the House of Commons on Jan. 30, Miss PATRICIA HORNSBY-SMITH, parliamentary secretary to the Ministry of Health, said that the basis on which farming at mental hospitals had been conducted had always been accepted as the need for a green belt to provide security and privacy, and outdoor occupation for suitable patients. There was no question of cutting down that type of farming. The third basis was the value of the farm and garden produce in the diet of patients, particularly where large supplies of milk and vegetables were not always available. As long ago as 1948 it was apparent that farming in many hospitals had developed into a large-scale venture undertaken for its own sake. A circular was then sent to hospital authorities pointing out that the criteria for farming should fall into the three categories which she had mentioned. Not much action was taken after this warning. People who had prize farms tended to hang on to them. A departmental committee was set up in 1952 to investigate the farming activities of these hospitals. It reached the conclusion that Government's criteria were not always being observed. It found that few patients were being employed on farm work as a form of occupational therapy. Only 3·3% of male patients were employed on farming and 3·2% in gardening, and only 0·3% of female patients were employed. The complexity of modern farming tended to make it less easy to use patients and there had been a steady increase of outside staff on these farms. The legal position was that hospital management committees had no authority to run a farm except in so far as it provided occupation or food for patients. The present position was that at Oct. 31 last decisions had been reached about 126 farms. Of these 47 were to cease, and 38 had to reduce their activities. A further 81 farms had been surveyed, about which decisions had not been made.

QUESTION TIME

Social Services and the Family

Replying to questions, Major GWILYM LLOYD GEORGE, the Home Secretary, said he had considered with care and sympathy the proposals made by Mrs. Fisher's deputation in July last year, for a general inquiry into the social services concerned with the family, and by a deputation from the Magistrates' Association in November that the suggested inquiry should be coupled with a review of the working of the juvenile-court system in England and Wales. Mrs. Fisher's deputation had drawn attention to the need for better coördination of the services in question. This matter had already received much attention in the departments concerned, and the Government proposed to follow up, by departmental study and administrative action, the steps already taken to improve coördination of the local services at all levels and to secure a combined approach to a family's problems. As regards the proposals of the Magistrates' Association for a review of the work of the juvenile courts and the treatment of children coming before them, he had come to the conclusion that the time was ripe for a new study of this subject, and he proposed to set up a committee to consider and make recommendations on the working of the relevant provisions of the Children and Young Persons Act, 1933, as amended.

Both deputations had also drawn attention to the need to pay more attention to preventive work; and the committee's terms of reference would include consideration of the powers and duties of local authorities under the Children Act for preventing the suffering of children neglected in their own homes. The membership and exact terms of reference of the committee would be announced in due course. In order that interested organisations might have time to consider what evidence to submit, he contemplated that the committee should not start work before the autumn. The Government believed that the action which he had announced would meet the situation and be of more practical value than a wide-ranging general inquiry at the present time.

Remand Centres

Replying to a question, Major LLOYD GEORGE said that he regretted that the need to restrict expenditure on Government

building made it impossible for him to say when he would be able to provide remand centres.

Quarantine for Poliomyelitis

Replying to a question, Miss PATRICIA HORNSBY-SMITH, parliamentary secretary to the Ministry of Health, said that the Minister was advised that quarantine measures for poliomyelitis contacts, if they should be necessary, should depend on local and individual circumstances as assessed by the medical officer of health. General advice was issued to all local authorities in July, 1954, and a form of notice suggested which might be addressed to contacts.

Statistical Branch of Ministry of Health

Replying to a question, Mr. R. H. TURTON, Minister of Health, said that a statistician was appointed in July, 1955, to advise on the collection, analysis, and interpretation of statistical information for the Ministry of Health. The present staff of the statistical unit consisted of 15 executive and clerical staff and 6 trained machine-operating staff.

Medicine and the Law

Surgeon Cleared of Assault and Negligence

ON Dec. 11, 1947, Miss A. H. Baker performed an operation for hysterectomy on a patient, a doctor, then aged 43. The patient now sued Miss Baker for damages for alleged assault and negligence; among other things alleging that the operation had, and would continue to have, a bad effect upon her health, that it had been performed without her consent, and that it was totally unnecessary. The patient gave evidence that although on entering the hospital she had signed a form of consent for the operation, agreeing to leave its nature and extent to the surgeon, she had thought that the operation to be performed was a curettage, and that anything that was done beyond that was done without her consent; she also alleged that, from the moment of her first examination, the surgeon had decided to perform a hysterectomy and had never communicated that decision to her. Miss Baker's evidence was that she had specifically raised with the patient the question whether, if anything was found requiring hysterectomy, the patient would like her to continue at once while the patient was still under the anæsthetic, and that the patient had agreed. Miss Baker said that when carrying out the curettage she found symptoms consistent with chronic fibrosis, and was able positively to diagnose that condition by the feel and sound of the curette; that she knew from her experience that the curetting would do no good in such a case, and that, having formed the view that the proper course was to remove the uterus, she performed the operation. Evidence was given that for upwards of three and a half years after December, 1947, the patient suffered from a severe mental and nervous disturbance; there was also evidence that, before the patient went into hospital, there had been matrimonial difficulties between her and her husband.

Mr. JUSTICE BARRY said that the primary cause of the patient's breakdown was the domestic trouble but at a later stage it was substantially contributed to by worries in connection with the operation, primarily due to her fear of carcinoma which at that time she felt might have existed and which she feared had been kept from her knowledge; later that fear developed into anxiety as to whether the operation had been necessary. There were two issues; the first—was the operation in fact performed with the patient's consent?—resolved itself into a direct conflict of evidence and he had no hesitation whatsoever in accepting Miss Baker's evidence on this issue in preference to that of the patient. As to the second issue—was the decision to perform the operation a negligent decision in that in making it the surgeon failed to exercise the proper care and attention which should be devoted by the surgeon to the consideration of a diagnostic problem during the course of an operation?—he thought that the patient was quite wrong in thinking that Miss Baker had arrived at a firm decision to perform the hysterectomy before the curettage. No surgeon with her experience would have done so as a result of a bimanual examination. The operation was unnecessary so far as carcinoma was concerned, and the case turned on whether he took the view that Miss Baker was telling the truth when she described her findings during the operation. He saw no reason to reject her evidence. He was satisfied that she was justified in diagnosing fibrosis, and how could it be said that it was negligent to remove the uterus of a woman of 43 who was affected by fibrosis, even though it had not reached the advanced stage which would enable it to be detected by examination? Miss Baker had had to reach her decision to perform a hysterectomy on clinical findings during the course of an operation, and he was satisfied that her decision was not only free from any taint of negligence but was a correct and proper decision to make. The patient's complaint was without foundation.

On the question of costs his Lordship said that the litigation had to some extent been encouraged and complicated by the fact that wholly inaccurate documents compiled at the hospital, in particular the diagnosis and clinical abstract which were sent to the patient, showed the existence of a disease wholly different from that for which the operation was in fact performed. Miss Baker was in no way responsible for those notes, but she knew that they had been sent to the patient and her omission to point out to the patient that these were wholly inaccurate ought to be reflected in the order for costs; Miss Baker should, therefore, be awarded only four-fifths of the costs after the termination of the patient's legal-aid certificate. Judgment was entered for the defendant with an order for costs accordingly.

Breen *v.* Baker. *Queen's Bench Division:* Barry *J.*, Jan. 26, 1956. Gilbert Beyfus, Q.C., and Roger, Ormrod (Bower, Cotton & Bower); A. P. Marshall, Q.C., and Duncan Macrae (Hempsons).

J. F. LAMB
Barrister-at-Law.

Every Man Expects England . . .

A mother in her will, dated Oct. 7, 1953, made no provision for her only son born in 1923, who was and always had been a mental defective. In 1953 when the mother fell ill and was unable to continue looking after him, he was taken to a hospital in the National Health Service, where he was at the present time. The mother, who died in December, 1953, left her estate of £2291 net to two friends. The son's sole property was a sum of £750. The evidence of the doctor at the hospital where the son was a patient was that extra comforts such as games and gramophone records were beneficial to him, but that these now needed replacement. By this application under the Inheritance (Family Provision) Act, 1938, the son (suing by his uncle as his next friend) asked that reasonable provision might be made for his maintenance out of the net estate of his mother.

Mr. JUSTICE VAISEY, during the hearing, observed that some people expected the Welfare State to perform not only their financial obligations but also those of affection. Nelson's signal at Trafalgar should now be written: "Every man expects England to do his duty."

Giving judgment, his Lordship said that in this case the mother had no doubt conceived the idea that the capital sum of £750 was adequate provision for the son, except in so far as he was maintained by the State. The question was whether under the provisions of the Inheritance (Family Provision) Act, 1938, the son ought to receive some provision from the estate of the mother. She had certainly not intended him to take anything from her estate, not from any lack of affection, but because he was being maintained by the State she thought that she was entitled to leave her property elsewhere.

The son had some powers of enjoyment, such as the playing of games and of gramophone records; and there was no doubt that these extra comforts which the State did not provide were beneficial to him. It was well-known that State hospitals were somewhat bare and lacking in the smaller pleasures of life such as could be provided with a little pocket money, and which a patient maintained by the State could have only from outside sources. A testator was entitled to say that the State had assumed the burden of the parent; and a parent in making a will could, to that extent, assume that his parental duties would be carried out by the State. There was nothing unparental or undutiful in that.

The mother in her life-time had provided the son with the extra comforts, and his present application was that some grant should be made out of her estate so that he could continue to have those extra comforts.

His Lordship thought that some such provision should be made, as the £750 belonging to the son would not last for ever. Maintenance ought not to be limited to the mere provision of food, clothing, and shelter, but should be extended to what were known as "comforts" in institutions of the kind in which the plaintiff now was. His Lordship did not think that the beneficiaries would consider it unfair on them if he altered the provisions of the will of the mother so that the son would be provided with 10*s.* a week, and he would order that the son should receive that sum out of the estate of the mother as from her death for his life or until cesser of his disability or until further order.

In re Pringle, Deceased.—*Chancery Division.* Vaisey *J.*: Feb. 1, 1956. B. S. Tatham (Crossman, Block & Co. for McKenzie Bell & Sons, Sunderland); K. W. Rubin (Bentleys, Stokes & Lowless for Criddle, Ord & Muckle, Newcastle upon Tyne) and Raymond Walton (Speechley, Mumford & Craig for Saul & Lightfoot, Carlisle).

IRENE G. R. MOSES
Barrister-at-Law.

The Doctor's Bag

The director of a company of photographic printers and free-lance photographers was carrying photographic equipment in a shooting-brake for the purpose of his business. The car was licensed as a private car and he was charged with the offence of unlawfully using the car without the proper rate of duty—namely, the higher rate applicable to goods vehicles—having been paid. The justices dismissed the charge on the ground that the shooting-brake was not constructed or adapted for the carriage of goods, because they considered that "if the test is the nature of the 'goods' irrespective of the type of vehicle, then the carriage of a doctor's professional instruments or a lawyer's text-books in a private car might result in these offences." The prosecutor appealed to the Divisional Court, and counsel on his behalf agreed that a doctor carrying his bag in a shooting-brake would be liable to the higher rate of duty, but not if he were using a private saloon car.

Lord GODDARD C.J. said that a shooting-brake was constructed or adapted for the carriage of goods and if it was used for that purpose the higher rate of duty had to be paid. However, if such a vehicle was not used for the carriage of goods, for hire or reward, or in connection with a trade or business it was not liable to the higher duty. It was not necessary for the court to decide in the present case whether a doctor using a shooting-brake and carrying his bag of instruments with him would be liable, but his Lordship was far from saying that it might not be so. The director of the photographic company was therefore liable to pay the higher duty. The case would go back to the justices with a direction that an offence had been committed.

Taylor *v.* Thompson.—*Queen's Bench Division (Divisional Court);* Lord Goddard *C.J.*, Hilbery and Stable *JJ.*: Jan. 26, 1956. Counsel and solicitors: Rodger Winn (Treasury Solicitor).

C. J. ELLIS
Barrister-at-Law.

Legislation on Sexual Crimes

The Government have decided[1] to introduce a Bill to consolidate the statute law relating to sexual crimes, and to the abduction, procuration, and prostitution of women, and some kindred offences.

The proposed corrections and minor improvements include clarification of drafting and removal of anomalies. Thus, the maximum punishment for attempted incest in the case of a man is two years, but in the case of a woman seven years. The reason is that the punishment for a man was originally two years' hard labour—regarded as heavier punishment than seven years' imprisonment—but in 1948 hard labour was abolished without any adjustment of sentences. The Government now propose to reduce the maximum penalty for this offence by a woman to two years.

The Government's decision to consolidate the existing law is not necessarily an indication that they have decided against major reforms. The proposed Bill will be introduced under the Consolidation of Enactments (Procedure) Act, 1949, which is designed to facilitate the consolidation from time to time of various portions of the statute law.

1. Consolidation of Enactments relating to Sexual Offences, etc., Memorandum. H.M. Stationery Office. 9*d.*

In England Now

A Running Commentary by Peripatetic Correspondents

HE got off his motor-bike and crossed the road towards me, but it was only as he reached the car that I recognised Kenneth. We felt awkward and shy with each other, and though I walked to the sidecar to meet his wife and baby daughter, my manner seemed false even to me. Normally, I am at ease with patients, but now I found myself over-hearty, embarrassed at the sudden reminder of a former intimacy.

Kenneth and I were intimate enough in the early months of 1947. I inherited him when—on my return from the wars—a senior colleague handed me a block of his tuberculosis beds. Kenneth had collected several medals with the Commandos—also pulmonary tuberculosis, and, when I first saw him, after a right pneumonectomy in those pre-streptomycin days, he lay in bed emaciated and hectic. His bronchopleural fistula on the right side had led to mixed tuberculous and pyogenic empyema, and in his remaining lung a fresh focus was accompanied by a pleural effusion. By way of introduction, my colleague whispered his history to me at the foot of the bed, murmured of the hopelessness of any treatment, and moved on. Keen ears picked up the words and I saw Kenneth turn his face to the wall.

I came and sat by his bed late that night, and at first he tried hard to be indifferent. Without preliminaries, I sketched out a position that he might have found himself in as a Commando—retreat cut off, wounded, surrounded by a powerful, well-armed and invisible enemy. What, I asked, would he have done—surrendered? His reply confirmed my estimate of his quality. I reminded him of what he had overheard that morning, stressing that it was a sound opinion that none would dispute—was he still prepared to throw defiance at the enemy and fight back? Again, he left me in no doubt. I outlined his programme for the next two years—pointing out the pain, hardship, and boredom he must cheerfully accept—but as we shook hands I knew he would win.

When he left for industrial training in 1949, he was a little twisted in body—a 10-rib Schede does that—but his spirit was straight enough.

Driving away after that short, embarrassed meeting at my car-door, I could not help thinking how easy streptomycin and isoniazid had now made it all; but no-one could claim they had made it more interesting.

* * *

The county town lies some fifteen miles to the east of our village, and we can reach it by either of two roads—the old road or the new road. These run parallel and are nowhere more than a mile apart, but they are totally different in character. The new road has attracted to itself all the horrors of modern life; while the old road remains exactly as it has been for hundreds of years.

The new road passes through three villages, each with a charming name, and not so many years ago each was as beautiful as its name. Now the dominating feature in all three is the garage, guarded by rows of tall petrol-pumps, littered about with cars in various stages of repair and innumerable advertisements. Half-way along the road is a vast caravan site, where twenty years ago was a shady wood. Two miles further along is a sort of knacker's yard of old cars in every stage of disembowelment.

Then saddest of all we come to *Ye Olde Traveller's Rest*, a monument of imitation antique, its beams and panelling of plywood, its windows leaded with strips of black paper. Along the new road the trees and coppices are being gradually cut down, and little bungalows built in their stead.

How different is the old road. We feel we owe it an apology for being in a car; we ought to be in a wagonette, a stanhope, or at least a dog-cart. It passes through two villages; in the first is an ancient smithy, where once many horses put on their shoes and where the one remaining horse is still shod. As the blacksmith says, four hooves give him a little shoeing practice. In the second village is a wheelwright, who does better than the blacksmith, for there are more tractor-drawn farm carts needing wheels than farm horses needing shoes. Leaving

behind these memories of the past, the old road continues to its one contact with modern life, and it is the one thing of which modern life can justly boast—a country house that has been turned into the headquarters of the county library. So you must not think that the old road is a useless, stuffy, old fogey, for at its end it leads you into the world of books.

* * *

It takes all sorts to make a laboratory as well as a world, as is shown by the delightful drawings in Professor Burch's book *Of Research People*.[1] The exhibitionist, the materialist measuring his bibliography with an inch-tape, the modest man, the cerebrator, the committeeman, and the research director are drawings fit to grace any laboratory bench. Unfortunately, perhaps, the text is more conventional. It is taken from a lecture on the problems confronting people in research today, and it gives, among other things, a serious account of the ideal research-worker, the ideal research director, and the ideal research assistant. It would be interesting to know if these ideal people exist in the flesh or if they are creatures of Professor Burch's imagination. Certainly it would be a thrilling experience to meet the ideal research-worker—a modest man, working peacefully in his garret, utterly absorbed in his own ideas, full of enthusiasm and zest, yet tempered with caution and deliberation. Professor Burch advises us to let him work alone, free from the responsibility of committees and teaching, free of all concerns about reports and research programmes. He might have added that our research-worker should be freed of all domestic chores. His clothes should be laid out for him in the mornings, his meals ready for him when he wants them, yet he should never be made to feel he must interrupt an important thought for food. He should do no gardening, no house-decorating or dish-washing, nor should he have to worry about the car, fuse-boxes, bills, holidays, income-tax, or shopping. On no account should his sleep be disturbed by crying children, and the advantages of a roughage-free diet seem worth exploring. If he does not produce lots of ideas under these conditions he should be wrapped in cotton-wool and sent to a conference abroad.

* * *

Fetching the coal from the basement the other evening, I was startled to find myself in the company of three attractive women in the altogether, two in the erect frontal position and the other reclining seductively on a discarded sofa. Far from being abashed they retained a distant haughty attitude, obviously socially indifferent to a mere menial. Lest my colleagues are tempted to volunteer for like duties, let me hasten to add that it was not a heavenly vision sent to reward the good deed.

Students, north of the Border, hold a Charities' Day each year. It started in the depressed 'twenties and has since become a highly organised procedure culminating in a fancy-dress procession second only to the Nice Carnival. The Eldest is having his first Charities' Day and his crowd propose to convert a lorry into a pirate ship. A hunt round the female department stores produced the three young women temporarily housed in our basement before becoming the somewhat immodest captured maidens on the deck beneath the Jolly Roger.

As an anatomist I consider they have perhaps too much of the Grecian boy about the thighs and hips to promise fecundity, but that is a common feature of ladies of their profession—an unfortunate idealism perhaps, as the average mother of a family must find it difficult to squeeze herself into the clothes which fit so gracefully on the model. My wife's verdict was "It is like a basement in Paris." Again, let me hasten to add, an impression gained from lurid reading rather than factual knowledge.

* * *

One bad foot deserves another?—Brighton's "Happy Feet Week" is being held in the Corn Exchange.

1. Of Research People. By GEORGE E. BURCH, professor of medicine, Tulane University School of Medicine, New Orleans. New York: Grune & Stratton. 1955. Pp. 56. $3.

Letters to the Editor

RESTRICTION OF ANTIBIOTICS?

SIR,—I would like to compliment you on raising many important and topical matters in your leader (Jan. 28).

It is the duty of governments to safeguard the welfare of their subjects; and the New Zealand government has, I believe rightly, concluded that some control of antibiotics is necessary in order to protect the individual, even if it means restricting the doctor's freedom in prescribing the drug in question. There seems no danger of proper cases being denied the drug.

The unrestricted use of antibiotics, especially the wide-spectrum tetracyclines, has been shown to lead to two possible groups of harmful effects—toxic or sensitising reactions in the individual, and the development of resistant strains which will affect both the individual and the community as a whole. This state of affairs is believed to have arisen because of the excessive and unnecessary use of antibiotics in the past, and recent reports from hospitals quote figures suggesting that the majority of pathogenic staphylococci are now resistant to penicillin and to many of the other antibiotics. If this trend is allowed to go on then we shall soon reach the stage where these and other organisms are resistant to all of the known antibiotics, and then we shall have to rely on the ingenuity of the chemists to keep us supplied with an ever-increasing number of new types to control these infections. The New Zealand government has therefore taken the bold step of restricting the use of one antibiotic, erythromycin, so that it is not abused and that it may be available for the treatment of infections which have proved resistant to other drugs.

After some ten years of the "antibiotic era" the time has surely come for us to reflect whether all these potent drugs are really necessary in the treatment of the many major and minor illnesses for which they are prescribed. The answer, in general practice at least, is undoubtedly that they are being used excessively. The vast majority of the common infections seen in practice will settle either on their own or with the aid of the relatively simple and safe penicillin and/or sulphonamides; the wide-spectrum tetracyclines and chloramphenicol are only rarely necessary. This is appreciated by many practitioners. Thus in a recent study of acute chest infections in general practice in which eight practitioners took part it was found that in only 15% of cases were the tetracyclines used[1]; in a recent investigation, again on acute chest infections, organised by the College of General Practitioners and including some fifty-five practitioners from all over the country, it was found that in only 12% of cases were the tetracyclines or chloramphenicol used; and in my own practice over the past two years out of 722 cases of all forms of infection in which antibiotics were considered necessary these two types of antibiotic were administered in only 10%, all the others being satisfactorily controlled with penicillin or sulphonamides. These groups of general practitioners find, therefore, that tetracyclines and chloramphenicol are rarely needed in chest infections, which are probably the commonest group of infections in practice. It would be interesting to see similar figures from hospitals.

What of other infections in general practice? In my own practice I tried to assess the need for antibiotics in some common groups of infections. In series of 100 consecutive cases of each clinical group, penicillin or sulphonamides were found necessary in the following proportions: skin infections, 40%; acute bronchitis, 20%; pneumonia, 51%; acute tonsillitis, 32%; and acute otitis media, 32%. No complications were noted in those not given antibiotics. These are very small numbers, but they do suggest that we are tending to forget that in many cases the body's natural defences are quite adequate to deal with these common infections. It is also possible that, either because of or coincident with the introduction of the antibiotics, there has been a change in the nature of these diseases and that the causal organisms are not so virulent as in the past; this is probable in measles and scarlet fever, at least. Because of all these facts we should adopt more rigid criteria for the use of antibiotics both in general practice and in hospital. In the majority of cases where these drugs are considered necessary the safer penicillin, in adequate dosage, is usually

1. Batty Shaw, A., Fry, J. *Brit. med. J.* 1955, ii, 1584.

satisfactory, and if there is lack of response this should be a signal, not automatically to start ringing the changes of other newer and more powerful antibiotics, but to reassess the case and reconsider the diagnosis. The real indications for the tetracyclines need to be more clearly defined; there must be very few absolute primary indications for their use.

These and other points related to the use of antibiotics need further study, for surely there are few other fields of medicine at present where muddled thinking so abounds.

There was much to be said for the arrangements, before the tetracyclines were generally released in April of last year, by which these drugs were available through hospitals for prescribed conditions. While I do not advocate a reversal to this system in its entirety, it did at least make one think twice before using the drugs. It was a pity that similar restrictions did not apply to the young hospital residents, who were perhaps much more liberal with the tetracyclines than the general practitioners.

The New Zealand government's bold step should lead our own Ministry of Health and all the leaders of our profession to think again how best to apply a rational policy on the use of the antibiotics.

Beckenham, Kent. JOHN FRY.

THE STRATEGY OF MEDICAL RESEARCH

SIR,—It is a pleasure to read your praise (Jan. 7) of the recently published volumes dealing with research in the United States. You rightly praise the unexpected finding which leads to great results and deprecate the "local service station" approach.

You criticise the fact that a crutch will fetch more money than a hearing-aid. Any disease can have a crutch as a motto or sign. You should praise the public relations of the friends of poliomyelitis and deprecate the tardiness of the friends of the deaf. There is much good will in the public toward research, and all it needs is intelligent direction. No-one will have anything but praise for your support of fundamental research. But practicality should not damn research either.

There is a small factual error. The Rockefeller Institute is totally independent of the Rockefeller Foundation.

The last paragraph of your editorial causes the greatest alarm and I would like to make some comments. These views of mine have developed over a period of years. You state: "this work should make us appreciate the value of our system by which grants to the universities and Medical Research Council are made through the Privy Council and are thus beyond any ill-informed or undesirable political pressures." No doubt you mean governmental pressures and not medico-political pressures. The important point is to know how much money travels via the university or via non-M.R.C. channels to the research-worker and how much via the M.R.C. Would it be fair to say that the M.R.C. has a virtual monopoly of research monies? The basis of a democracy is a combination of independent and competing units, and research should be on the same sound basis. If vitamin Q was being investigated by D.A. with M.R.C. funds, would D.B's request for funds to the M.R.C. be well received if his views were divergent from those of the M.R.C.'s advisers?

As the U.S.A. was not considered to have a common law, the Congress formally enacted, in 1890, the "Sherman Anti-trust Act" to declare illegal "every contract . . . in restraint of trade,"[1] to help law-abiding citizens who felt victimised. Owing to continual vigilance this has been a useful statute. The size of the groups involved is not important, and combinations which contribute to efficiency have not been destroyed.

Whether the M.R.C. acts in restraint of trade (in this case research) depends on the activity and strength of the competing agencies, which in this case would seem to be the local hospital committees and the universities. The threatening aspect is the growth of the power of the M.R.C. Concerted action is not monopoly, and the M.R.C. has played a leading part in joint clinical investigations which deserves great praise.

In discussing the Sherman Antitrust Act, Arnold[1] has said:

> "Whether some of the largest and most exacting monopolies are directed by men with criminal or benevolent intentions is purely a matter of accident. It is the results growing out of their operation . . . which are significant for our purpose. Actually the violation of antitrust laws by great industrial leaders does not usually fall in the class of offences which involve moral turpitude. It is more like passing through a traffic light at high speed without the intention of harming anyone. This makes it less immoral but not less dangerous."

Research money with strings attached is not dangerous if one can turn elsewhere, but research money given freely may be restrictive if no other source is available.

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Iowa, U.S.A. J. MACLEAN SMITH.

1. Arnold, T., et al. The Sherman Antitrust Act and its Enforcement. Law and Contemporary Problems; vol. 7, Durham, North Carolina.

EPIDEMIC KERATO-CONJUNCTIVITIS

SIR,—I was interested to read your annotation (Jan. 28), which mentioned an outbreak of pharyngo-conjunctival fever in America. I have recently seen one or more cases of this condition in my own practice in South-East London.

On Jan. 7 I saw A, aged 7, who had fallen ill the day before. She complained of headache, a sore eye, loss of appetite, and general malaise. She was pyrexial and had severe conjunctivitis in the right eye. The pharynx was slightly injected, and there were a few enlarged cervical glands. The patient was treated with penicillin eye ointment, and later with sulphacetamide drops. Neither of these affected the conjunctivitis. The pyrexia persisted until the ninth day of the disease, when the temperature dropped to normal and the eye condition began to clear. The next day the child was perfectly well. Since the clinical picture conformed to the description of pharyngo-conjunctival fever,[1] blood was sent for serological examination. On the thirteenth day of the illness complement-fixation tests, kindly carried out for me by the Virus Reference Laboratory, showed evidence of recent infection with the A.P.C. group of viruses. Six or seven days before she fell ill, this child was in contact with another child, who was reported to have had a similar illness. This history fitted in with the incubation period of pharyngo-conjunctival fever; but I later learned from the family doctor concerned that the second child had had a simple upper respiratory infection without conjunctivitis.

On Jan. 10 two brothers, B and C, aged 6 and 3, living in a self-contained flat above A, began to have a similar illness, which lasted only four days. B had conjunctivitis in one eye, but C had no eye involvement. No serological investigations were made in these two cases.

On Jan. 14 A's mother had an attack of influenza, which lasted three days, and on Jan. 13 the mother of B and C developed chickenpox.

In view of the mild clinical course of pharyngo-conjunctival fever, this condition may be not uncommon in this country.

London, S.E.26. R. N. JACKSON.

BLOOD-TRANSFUSION

SIR,—Your leader (Dec. 31) and subsequent correspondence reveal some ignorance of the scope and quantity of emergency work done at smaller provincial hospitals.

The suggestion that the pathologist should be got out to perform every emergency cross-match has already been dealt with. If this proposal were logically extended, "the most expert available" surgeon and "the most expert available" anæsthetist should also be called out of bed to every emergency, and I have yet to hear that this is done.

The suggestion that hospitals which have no resident clinical pathologist should not undertake work for which transfusion is often needed is obviously absurd. At this hospital with some 350 beds (and there must be hundreds of a similar size and type), which has large orthopædic and maternity departments, as well as acute medical and surgical beds, emergencies requiring transfusion at night are frequent in one department or another. Is it seriously suggested that all these emergencies should be sent to the nearest hospital with a resident pathologist, probably 25 miles away? Far from having a resident pathologist, we have but one registrar, in orthopædics, and no resident surgical officer; and a high proportion of the resident staff are in the pre-registration stage.

Lastly, as regards the practice of using technicians for emergency grouping and cross-matching, I would point out that of the staff of seven in this laboratory four are either students or junior technicians, and I assume it is not suggested

1. Ryan, R. W., O'Rourke, J. F., Iser, G. *Arch. Ophthal., Chicago*, 1955, **54**, 211.

that they should take responsibility for this work for which fully qualified doctors are considered unsuitable. Of the remaining three technicians, one is a biochemical technician and has little experience of blood-grouping, and I am therefore left with my hæmatological technician who does the day-to-day grouping and cross-matching, and the senior technician. As these two live in the country and have neither transport nor telephones, and as the hospital has no transport of its own available at night, the only way these people could be obtained would be by sending a taxi from the nearest town. A delay of at least one hour would be inevitable before the grouping of the patient could even be begun, and several hours before the technician got home again, perhaps only to be wanted again for an emergency in another department. With only two available technicians it is quite unreasonable to ask them to sacrifice their domestic arrangements to live-in every second or third week throughout the year.

If the regional boards have taken note of the comments in your columns we may confidently expect either a considerable expansion of existing pathological establishments, or instructions to send our emergencies elsewhere. Meanwhile, we must deal with the situation by the best attainable, if not the most desirable means, with the limited staff allotted to us—and this must, of necessity, include residents performing emergency cross-matching. This difficult task is not made easier by the uncompromising statements attributed to Dr. French and Dr. Loutit, which can serve only as ammunition for use against the next victim of litigation.

Department of Pathology, Pembury Hospital, Kent. W. M. R. HENDERSON Pathologist.

THE ÆTIOLOGY OF CLEFT VERTEBRAL ARCH IN SPONDYLOLISTHESIS

SIR,—Dr. Mutch and Professor Walmsley are to be congratulated on their lucid description of the mode of ossification of the vertebral arch (Jan. 14). This is highly relevant to the ætiology of separation from the rest of the vertebra of the inferior articular process, lamina, and spinous process. This condition has a plethora of names—e.g., pars interarticularis lesion, cleft arch (surely a misleading name ?), spondyloschisis, and separation of the lamina—and is (as the authors say) only associated with spondylolisthesis (forward slipping of a vertebra) in about half the cases, whilst spondylolisthesis certainly occurs very frequently without any bony vertebral lesion. There is, therefore, only a loose association between the two conditions.

But the authors should be criticised for their sweeping statement that "all critical observations have substantiated the view that a cleft in the pars interarticularis is the result of fracture of an ossified arch." This is by no means so, and the evidence for a purely traumatic cause is far from convincing. For despite a century's research we are today unable honestly to answer the ætiological questions first asked by Killian.[1]

Examination of fœtal and neonatal material by such careful workers as Mall,[2] Willis,[3] Batts,[4] and Rowe and Roche [5] has failed to bring to light examples of the anomaly in fœtal or neonatal material. How then is it acquired later in life ? To say simply that it is a fracture begs the question.

If the fracture (= the separation of the arch) is caused by trauma, what is the explanation of the widely differing ethnic and sex incidence ? How can this fracture be due to indirect trauma *and* be unilateral (as it sometimes is) ? Why is the thoracic region commonly affected in East Africans, the cervical region in Japanese and Eskimos, and the lumbar region in North American whites ? [6]

It is extremely difficult to answer these somewhat awkward questions. The facts alone should make one wonder whether perhaps a genetic factor is not directly involved.

It is a common fallacy to assume that a genetically determined defect is always congenital. In fact the overt effect of genetic abnormality may only be revealed in late life. Perhaps this may be the explanation of the present problem. For Grüneberg (personal communication) has found a genetically controlled lesion in laboratory mice comparable to human spondyloschisis. Willis [3] considered that structural failure at this point was facilitated by its penetration by large nutrient vessels. In East African skeletal material the pars interarticularis of thoracic and lumbar vertebræ was pierced in about 10% of cases only with a nutrient foramen of variable size. Possibly these nutrient blood-vessels are genetically determined phenotypes. They are often absent, but if present, and large, may themselves cause the separation in childhood and adolescence, or may so weaken the thin shell at the pars interarticularis that fracture follows trauma later on in life. This would account for the rise of incidence with increasing age shown by Stewart.[7]

Department of Anatomy, Makerere College Medical School, Kampala, Uganda. DAVID ALLBROOK.

1. Killian, H. F. De spondylolisthesi gravissimae. Bonn, 1854.
2. Mall, F. B. *Amer. J. Anat.* 1905, **5**, 433.
3. Willis, T. A. *J. Bone Jt Surg.* 1931, **13**, 709.
4. Batts, M. *Ibid*, 1939, **21**, 879.
5. Rowe, G. G., Roche, M. B. *Ibid*, 1953, **35A**, 102.
6. Allbrook, D. B. *Amer. J. phys. Anthrop.* September, 1955.

TUBERCULOSIS STATISTICS

SIR,—Dr. Baldry (Jan. 28) raises an important point about the tuberculosis-mortality rate. If the number of deaths is obtained from the return to the Ministry of Health (T145) it should bear some relation to the figure given on the form T137 that is sent in by the medical officer of health, but these figures can never be the same. In the case of T137 the public-health authorities, certainly in this borough, enter persons as having died from pulmonary tuberculosis if those words are mentioned anywhere on the death certificate. This is true whether or not the patient died from suicide, diabetes, or a cerebral catastrophe; but the official mortality-rate for pulmonary tuberculosis is calculated at the General Register office from the first part of the death-certificates.

If this absurd anomaly is to be corrected the whole problem of annual returns to the Ministry, regional hospital boards, and public-health authorities must be considered afresh, if only to prevent overlapping and unnecessary work. This applies not only to pulmonary tuberculosis but to all medical, and especially clinical, statistics. To what use do the Ministry put this information ? Is there any suggestion that their long-term planning is in any way influenced by this information ? Is all the information ever published, not only in an accessible but also in an intelligible form ? (Some appears in the annual report of the chief medical officer of the Ministry of Health.) Some regional hospital boards and some public-health authorities ask, either quarterly or annually, for information that is almost identical to that supplied to the Ministry. Do these bodies decide their future policy as the result of this information ? How do the returns from the mass miniature radiography units throughout the country relate to the information that is supplied to the Ministry from chest clinics, and especially to the notification-rate ?

Reverting to the particular form T145, this is meant to reflect the work of the chest clinic but is badly designed. Not only does the covering circular make extremely difficult reading but the questions asked on the form are obscure and local interpretation must vary considerably. For example, in "Number of separate individuals (excluding transfers) examined during the year" the word "examined" means any patient examined by a medical officer *or who could have been deemed to have been so examined by virtue of the scrutiny of the radiographs*. Consequently the total figures will of necessity be considerably higher in those clinics which run a chest service for general practitioners than in those where clinical examinations only are carried out.

It is not possible to bring out in the returns that many contacts are examined by tuberculin testing only, others by radiography only, and a third group by clinical and radiographic examination and tuberculin testing. There are other lacunæ in this form which make it almost worthless. As a result the true over-all state of tuberculosis in this country cannot be determined.

I suspect that the Ministry working party on statistics has either been disbanded or has not met for some considerable time. In any case a chest physician has never been a member. The time has come to reconsider the whole problem of medical statistics as supplied to the Ministry of Health, and in particular the returns that are made from chest clinics. These returns should include not only figures about tuberculosis but also information about chronic bronchitis, carcinoma of the lung, and the many other important conditions that are now seen at chest clinics.

Regarding the latter part of Dr. Baldry's letter about notifications, one wonders how much uniformity is shown throughout the country—do all chest physicians notify primary hilar disease and cases of tuberculin conversion, or do they limit their interpretation of the term to overt clinical disease ?

7. Stewart, T. D. *Ibid*, 1951, **9**, 251.

Since the new regulations were introduced in 1952 no clear definitive statement has been made on this point. The problem of tuberculosis is still not receiving the immediate and earnest attention that it should. If routine annual tuberculin testing of all school-children, with the tracking down of the source case in tuberculin-positive cases, radiographic examination of all hospital cases, both inpatients and outpatients, radiographic examination of immigrants, vagrants, and especially of selected age-groups such as men over 45, were carried out there would be an appreciable rise in the notification-rate, and also a slight rise in the mortality figures. All this would suggest that we were gradually getting to know more about the level of tuberculous infection in the community and make us realise that not only is the problem great but we are still a long way off the solution.

Chest Clinic,
23, Brunswick Park,
London, S.E.5. KENNETH MARSH.

ACUTE MASTITIS

SIR,—With reference to Dr. Mavis Gunther's article (Jan. 28) I should like to make the following observations:

"Attempts to find an organism failed on the five occasions when blood was taken for culture as the temperature rose"; but bacteriological examination of the secretion from the affected gland would be more logical, on account of the fairly effective milk-blood barrier.

Intramammary antibiotic therapy through the nipple or otherwise into the secretion may be very effective by providing a high concentration of the substance where it is most needed.

In the cow there is little risk of mastitis with cessation of milking, provided a long-acting antibiotic, such as procaine penicillin in oil (as little as 100,000 units every two days for a week), is introduced into the teat canal as a prophylactic. There is abundant evidence that in the cow 100,000 units of sodium penicillin administered through the teat canal daily for four to five days will give excellent results in acute streptococcal mastitis; usually clinical cure results in twenty-four hours, and bacteriological cure in three to four days. Bovine staphylococcal mastitis is not so responsive, but unless intramammary antibiotic therapy is used the prognosis may be poor.

Chwilog, Caernarvonshire. T. HUGHES ELLIS.

POLIOMYELITIS

SIR,—I have read Mr. Daw's letter (Jan. 21) with great interest.

Last term my five-year-old daughter started going to the council infants' school. After about three weeks she developed a cold, so I decided to take her but to have a word with her class-mistress. As it happened, I met the headmistress; and to my surprise she said she would much prefer the child not to come until the cold had cleared.

Later that morning I received a visit from the sanitary inspector, who asked why my daughter was not at school. I explained. When he murmured something about polio which I did not hear correctly, I said, "Well I suppose it's possible although it looks like an ordinary cold, but why pick on us?" He looked astonished and said, "But didn't Miss—— tell you? A child in your daughter's class has polio. That is why she asked you to keep her at home."

I decided not to send my daughter back to school for at least a week. Meanwhile, I received a daily telephone call from the sanitary inspector's office to inquire about her health. During the first of these telephone calls I asked whether this secrecy was council policy, but was assured that it was entirely a matter for the headmistress to decide.

Later I visited the officer in charge of infants' education in the borough, which is in London. It was perfectly clear from his reaction that it is the policy of this council to keep all knowledge of poliomyelitis as close a secret as possible. He said that, had I asked the headmistress point blank if there was polio in the school, she would in all probability have said No. He attempted to justify this extraordinary attitude by saying that parents would be frightened and keep their children away if they knew.

Now, personally I find it reasonable to be frightened of poliomyelitis, and clearly I am not alone in this, because at the same time a reputable public school circularised the parents when they had one or more cases.

Surely it is quite wrong to suppress a thing of this nature. After all, one takes quite a different view of a cold if it is known that the child has been in contact with a case of poliomyelitis; then one can at least prevent it from making further contacts. Secondly, it is folly to think that such things can be kept secret. As Sir Winston Churchill well knew, there is much less danger of panic if people are told bad news by authority than if they find it out through distorted rumours

M. E. C. BLACKLAY.

"MUNCHAUSEN'S SYNDROME"

SIR,—A man corresponding to the one described in previous letters[1] was seen in the casualty department on Feb. 2. Clinical and radiographic findings were identical with those reported by Dr. Baker (Jan. 28). He complained of severe headache and giddiness and ataxia. He denied ever having been a seaman and gave his occupation as vocalist and mental nurse. On being offered analgesics and the services of a psychiatrist he left the hospital with some indignation. His ataxia was observed to have disappeared when he reached the street. This patient had previously been seen here on May 30, 1955, with a story that he had been admitted unconscious to Queen Adelaide Hospital, Dublin, five days previously and had undergone a radical mastoidectomy there. At that time he had a right facial palsy.

Middlesex Hospital,
London, W.1. A. O. ROBSON.

THE EPIDEMIOLOGY OF LUNG CANCER IN NEW ZEALAND

SIR,—Dr. Eastcott (Jan. 7) is to be congratulated on a first-class contribution to the study of the ætiology of lung cancer. Dr. Joules (Jan. 21) is rather critical, but completely fails to present any evidence to justify such remarks as "Dr. Eastcott has failed to note the scientific evidence from many parts of the world that there is a causal relationship between the number of cigarettes smoked and the incidence of this disease."

The death-rate from lung cancer among males aged 45–54 years is almost three times as high in this country as in New Zealand. Are we to conclude, from what Dr. Joules says, that this is due to the fact that the former group has smoked three times as many cigarettes, on the average, as the latter group? It seems rather unlikely. But supposing it were so, it must follow that pipe-smoking is a relatively harmless pastime, for the total consumption of tobacco per head is about the same in both countries, so that the inhabitants of New Zealand must have smoked three times as much pipe tobacco as the average Englishman. Would Dr. Joules agree with this view?

Dr. Eastcott has not only demonstrated large differences in the incidence of lung cancer between native-born New Zealanders and immigrants from the U.K., he has also shown large differences in the latter group—between those who left the U.K. when under 30, and those who left after that age. Perhaps Dr. Joules could give some cogent reasons for expecting a difference in smoking habits between these two groups.

It would be foolish to deny the existence of a relationship between smoking and lung cancer, but it seems equally foolish to insist that this is the only factor involved, especially in view of a recent paper by Stocks and Campbell.[2] Some towns in England, for instance, have twice as much lung cancer as others. It is unlikely that the inhabitants of the former towns smoke twice as much as the inhabitants of the latter. These observations, it seems to me, are not at all incompatible with the idea of some sort of synergistic effect between smoking and air pollution.

London, N.7. J. TORRANCE.

SIR,—I should like to correct a misunderstanding by Dr. Joules (Jan. 21) of my article. He says I have "failed to note the scientific evidence from many parts of the world that there is a causal relationship between the number of cigarettes smoked and the incidence of lung cancer." This is not true. I have followed this work with the greatest admiration, and in particular I regard the work of Doll and Bradford Hill as a classical study that will stand out in history like that of such men as Snow, Budd, Ross, and

1. *Lancet*, Jan. 14, 1956, p. 107; *Ibid*, Jan. 21, 1956, p. 160; *Ibid*, Jan. 28, 1956, p. 207.
2. Stocks, P., Campbell, J. M. *Brit. med. J.* 1955, ii, 923.

Goldberger. I have merely demonstrated a second way of killing the cat and in doing so have in no way repudiated the first, and I think that most people who have surveyed all the facts that bear on the ætiology of lung cancer would be reluctant to admit that cigarette-smoking alone subsumes them all.

I strongly agree that smoking habits in New Zealand merit investigation, and I am well aware it is a defect in my thesis that this has not been done; but I have been unsuccessfu in rousing interest in this though I have been trying hard for several years. Perhaps the British Empire Cancer Campaign might support such an investigation, or the tobacco companies?

Petone, New Zealand. D. F. EASTCOTT.

MEDIASTINAL SURGICAL EMPHYSEMA

SIR,—The curious complication of perforated duodenal ulcer described by Mr. O'Donoghue (Jan. 28) calls to mind a very similar case.

The patient, a man aged 73, was admitted as an "acute abdomen" in March, 1954. He had been ill for two days with griping abdominal pain, abdominal distension, and occasional vomiting. He was sent in with a diagnosis of large-bowel obstruction. There was nothing relevant in his previous history.

The patient was obviously ill, with a grossly distended abdomen which was tender in all areas. Extensive subcutaneous emphysema was present over the anterior and lateral aspects of both sides of the chest; this was more pronounced on the right side, where it extended up into the neck. Radiography confirmed the presence of a pneumoperitoneum and of mediastinal and subcutaneous emphysema.

The diagnosis presented certain difficulties. Because of the patient's account of the onset of his trouble, and his subsequent progress, spontaneous rupture of the œsophagus seemed unlikely; in any event, this diagnosis would not explain the pneumoperitoneum. No reasonable alternative explanation of the picture being forthcoming, laparotomy was undertaken. A considerable amount of gas and gastric contents were present in the peritoneum. A gastric ulcer was found on the posterior wall of the lesser curve at about its mid-point. This was adherent to the pancreas and had perforated at its inferior margin into the lesser sac. The ulcer was freed from the pancreas and the perforation closed. Examination of the abdominal œsophagus and cardia disclosed no obvious abnormality. The peritoneal cavity was sucked out and the wound closed without drainage. Convalescence was complicated by a burst wound which required re-suture. The patient has since remained in good health.

As Mr. O'Donoghue rightly points out, mediastinal emphysema is listed as a recognised complication of artificial pneumoperitoneum, but information on the subject appears to end there and I could find no published report on the mechanism by which this complication occurs. Eventually I came to the conclusion that air must have entered the retroperitoneal plane at the site of the ulcer. I believe that when leakage into the mediastinum occurs in artificial pneumoperitoneum, the air emerges from the peritoneum via the site of puncture and that spread occurs in the loose extraperitoneal layer to the under-surface of the diaphragm. The mediastinal tissues are then involved probably by way of the œsophageal opening.

I find Mr. O'Donoghue's suggestion that leakage took place as a result of rupture of the peritoneum of a hiatus hernia a little difficult to believe. It would not have been applicable in my case, as no hiatus hernia was present. In any event, we know from hernia at other sites how well the peritoneum stands up to stretching forces in the absence of injury. Hiatal deficiency and herniation is very common; so also is peptic perforation.

The inference is fairly clear. The extreme rarity of mediastinal emphysema associated with peptic perforation must surely signify that its occurrence depends on the presence of some very rare circumstance or combination of circumstances. Obviously a rare congenital peritoneal deficiency is a possible explanation, but I suggest that it is more likely to depend on some freak location of the site of the ulcer or some abnormality in the pathological progression of the lesion which allows access of air from the ulcer wall into the loose retroperitoneal plane. In the vast majority of cases this is rendered impossible by obliteration of tissue-planes in the vicinity of the ulcer as a result of inflammatory reaction.

County Hospital,
Lincoln. DENIS EBRILL.

HOMOSEXUALITY

SIR,—May I explain to Dr. Learoyd and Dr. Howard, whose letters appeared last week, the purpose of sex codes? They exist, firstly, to maintain the family as a social unit; hence the prohibition of incest and adultery; and secondly, to balance the reproductive and non-reproductive types of sexual activity with the population needs of the community. Thus the ancient Greeks, who had to restrict the numbers of their ruling class to maintain their slave economy, encouraged a very moral type of pederasty; whilst the Hebrews, from whom our sex codes are derived, prohibited all non-reproductive forms of activity, for they needed as large a population as possible to survive in competition with their warlike neighbours.

Morality is and always will be the supremely important quality in any civilised community, but it is independent of any particular code. Codes can and must change with changing conditions if a community is to survive in competitive circumstances.

This principle is nicely illustrated by the history of the Lenten fast. When this fast was established there was virtually no fresh meat in the country in the early months of the year, and it was important that such livestock as there was should be kept alive to fatten on the summer grass. It was therefore advantageous that those who were not compelled by economic necessity should be encouraged to abstain from meat during Lent. But if the fast had been continued by industrial workers once refrigeration had made supplies available all the year round, nutrition and output would have suffered relatively to non-fasting groups. Fortunately an excess of refined carbohydrates became available at the same time, so the principle of fasting was preserved by changing the code from meats to sweets without physiological harm.

Our reproductive needs have changed so greatly in the last fifty years owing to reduced mortality at all ages that it is difficult to see how our society could have remained stable if Marie Stopes had not succeeded in her campaign for contraception. Our code in respect of contraception is so far changed that a man who does not now control his reproductive capacity incurs no less censure than the man who did so only thirty years ago.

Logically, those who are opposed to homosexual activity in the community should encourage homosexuals to persist in their activity. For, as Professor Penrose pointed out to the B.M.A. Committee, homosexuals represent one end of the scale of continuous variation of sexual polarity like height; and, if we wanted to reduce the number of tall men, surely we should welcome any activity that makes it less likely for them to reproduce themselves?

Those who appreciate the contributions made by homosexuals in many walks of life might protest at the loss which this policy, if successful, would cause the community; but I feel it is just as immoral to enjoy the books, plays, or music of a homosexual, whom we should imprison if our policemen could trap him, as it would be to share in the profits of a fraudulent financier.

Because the public hears very little of homosexual relationships other than those that pass through the police-court, they think that all such relations are immoral. But those who see cases, or anyone who cares to re-read Havelock Ellis, will discover that most homosexuals have very high moral standards.

London, N.W.1. J. F. TUTHILL.

ATHEROMA

SIR,—Dr. Balme (Dec. 24) asks whether hæmophiliacs ever got atheroma, should they live long enough, and also wonders if their aortas develop normally. This was in reference to Dr. Levene's interesting work with the electron microscope (Dec. 10). The following case may partly answer the first question; but the evidence is highly suggestive only, since luckily this patient is alive and well and there is thus no microscopic confirmation.

The patient, aged 67, has a family history of hæmophilia and himself has a classical and hæmatological picture of the disorder. This man has lived a long and precarious existence, with multiple bleeding episodes—from circumcision, after tooth extractions, following many minor operations, into knee-joints, and finally from the urinary tract. He is normotensive. These severe bleeding episodes have become less frequent with advancing age. I looked at the radiographs of his chest with a radiologist, and there was definite calcification

in his tortuous aorta, both on postero-anterior and lateral views, completely consistent with atheroma.

This finding, however, is not at all incqnsistent with the theory that was proposed for the pathogenesis of atheroma formation, since the blood of hæmophiliacs obviously does clot, even if it takes longer than normal blood; and even though this patient did have a prolonged clotting-time (41 minutes), he had had 67 years to lay a little fibrin down on his aorta.

I am grateful to Dr. Benjamin Jacobson for allowing me to describe this case.

Massachusetts General Hospital,
Boston 14, Mass., U.S.A. JOHN R. DAVID.

INGUINAL HERNIORRHAPHY

SIR,—The "anatomical proof" by Mr. Doran (Dec. 24) of the inability of the conjoined tendon to act as a sphincter or shutter in relation to the inguinal canal seems to me to be built up on a false premise. He takes a point on the linea alba below the umbilicus and claims that it cannot move in the long axis of the body so long as the sternum and pubis remain the same distance apart. From this assumption he deduces that the conjoined tendon cannot shut down on the spermatic cord.

The fallacy is that the linea alba is elastic, its length in the extended position of the trunk being at least 50% greater than that in the flexed position. It is therefore illogical to claim that any point on it can be regarded as fixed, and it would be quite possible for points on its lower half to move towards the pubis on contraction of the abdominal muscles. Much depends on the direction and power of the muscle-fibres inserted into the linea alba, and it could be argued that since the pyramidalis muscles are the only ones which act almost parallel to the linea alba they will tend to pull down its lower part towards the pubis.

Mr. Doran may be correct in his claim regarding the absence of a shutter action; indeed, his own observations with radio-bpaque markers support this view. But although he affirms that the lower fibres of the internal oblique muscle appear to run almost parallel to the inguinal ligament the anatomical insertion of the conjoined tendon is undoubtedly in part into the pubic crest and pectineal line, and fibres from the internal oblique and transversus abdominis arising from the inguinal ligament cannot reach such an insertion without arching over the spermatic cord. Now, if the arched fibres of the conjoined tendon shorten when they are stimulated—and there seems to be no reason why they should not—their course must become straighter and this can only happen by their approximating more closely to the inguinal ligament.

Manchester. HERBERT HAXTON.

DOMICILIARY CONSULTATION IN PSYCHIATRIC PRACTICE

SIR,—The problem of the community care of mentally disabled persons referred to by Dr. Skottowe (Jan. 28) has been partially solved in Holland by the establishment of sheltered workshops in some of the larger towns. I recently visited one of these workshops in the Hague, and was most impressed by the way in which both mentally ill and mentally defective patients were gainfully employed. This workshop has already been briefly described by Carstairs et al.[1]

There are obvious disadvantages in mixing psychotic and defective patients, and plans have already been made for building new workshops where the two types of patient will be separated. At present 290 patients (out of a total population of 600,000) are employed. The staff consists of a works manager, 6 technical assistants, 7 nurses, and 3 clerks. The whole enterprise is under the direct supervision of the city psychiatrist, Dr. N. Speyer. The patients work a 48-hour week and are paid 40–80 cents per hour according to ability and output. The "normal" factory worker is said to get 90 cents to 1 florin per hour (1 fl. = 2*s* approx.).

Work is sent in from local factories, which also lend some of the necessary machinery and collect the finished products. The work done includes making cardboard boxes, packing chocolates, machine-riveting boxes, making articles of clothing with electric machines, assembling brake cables for mini-motors, and book-binding. The patients live either in their own homes or in hostels and come to the factory by public transport; as the mentally ill patients improve they are found jobs in outside factories. Psychiatric supervision is maintained by the department of mental health of the municipality of the Hague.

If something of the same nature were to be started in this country there would be need for close collaboration between the local authorities and the regional hospital boards, but it would be a great pity if so potentially valuable a project were to be abandoned because of administrative difficulties. By the use of such sheltered workshops not only could many patients be kept out of hospital but many of those now more or less permanently resident could be discharged with benefit to themselves, through prevention of deterioration and improvement in morale, as well as to the country as a whole by reducing the burden on the health service and helping in the production of goods.

London, W.1. J. C. SAWLE THOMAS.

1. Carstairs, G. M., Clark, D. H., O'Connor, N. *Lancet*, 1955, ii, 1025.

"ESPRESSO WRIST"

SIR,—As far as I am aware no social-medicine study has been made of the possible effects of the coffee-bar epidemic which has swept London since the war. A few visits will serve to convince an observer that there is much to discover both amongst those who serve and those who meet to drink. Meanwhile, anyone who is contemplating such a survey is offered the information of an interesting orthopædic complication—"the espresso wrist."

de Quervain[1] described stenosing tendovaginitis at the radial styloid as long ago as 1895, and we are used to seeing cases amongst young mothers engaged in unaccustomed nappie-wringing, seamstresses working overtime for the Christmas season, and high-speed obsessional typists. To these we can now add the espresso-machine operator. For each cup of coffee he has to carry out three to four strong movements of the wrist into full radial deviation, and in an average day may carry out several thousand similar manœuvres. (Barmaids are no doubt immune because the beer is pulled with wrist held stiffly, the elbow being flexed.)

Fortunately the acute condition responds readily to one or two well-placed injections of hydrocortisone and a slight change of technique; and the counter-attack by the tea-drinkers—we are told—is already well under way.

London, W.1. A. W. LIPMANN KESSEL.

1. de Quervain, F. *KorrespBl. Schweiz. Ärz.* 1895, **25**, 389.

ECLAMPSIA

SIR,—I am grateful to Dr. Schuurmans for his informative letters (Dec. 17 and Jan. 21). The information he supplies conforms with my ideas on eclampsia.

In Holland, during the war, eclampsia almost disappeared with a low protein, low carbohydrate diet, which bordered on starvation. In the Belgian Congo, among two million natives living on an "inadequate diet," also presumably of low protein and low carbohydrate content, not "a single case of toxæmia has ever occurred." (What a wonderfully thorough system of antenatal care they must have in the Congo to be able to report this!)

On the other hand, in Australia Hamlin has eradicated eclampsia with a high protein, low carbohydrate diet. Clearly eclampsia disappears in spite of, and not because of, a high or low protein intake, but high protein intake is to be recommended because it helps to abate hunger when mothers are only eating little carbohydrate. Equally clearly, in all three groups, it is the low carbohydrate intake which is the vital factor in preventing eclampsia and toxæmia.

Coloured women in the Southern States of the U.S.A., eating relatively more carbohydrate, suffer, despite "the same antenatal care," much more commonly from severe toxæmia than do white women, who are eating more protein and (presumably) relatively less carbohydrate, in the Northern States. But no antenatal care will prevent toxæmia if the diet is faulty—i.e., if the carbohydrate is excessive. The "care" merely observes the effects of the toxin on the mother and tries to palliate them, having waited for the toxin to be produced before it acts. Production of toxin, as I said (Nov. 5), can only be prevented reliably by controlling diet, appetite, and weight.

If only the suicidal saying "eating for two" could be forgotten, and if a new motto, "eat starchy foods sparingly,"

were adhered to by all expectant mothers, the result would certainly be drastic reductions in the numbers of maternal deaths, stillbirths, and neonatal deaths, in the number of toxæmic patients occupying hospital beds, and in the number of babies filling the cots of premature-baby units. It would save many lives, much expense, and much domestic upheaval; and obstetricians would be spared many grey hairs.

Reading. K. DOUGLAS SALZMANN.

LEPTOSPIROSIS AMONG BRITISH TROOPS IN MALAYA

SIR,—Dr. Fairburn and Dr. Semple (Jan. 7) suggest that penicillin and chloramphenicol play no useful part in the treatment of leptospirosis. Having just returned from Malaya, where I was in charge of the medical wards in the third military hospital there at Kluang, Johore, may I state briefly my opinions on treatment of this disease?

In one year, during which time approximately two cases of leptospirosis a month were admitted, penicillin therapy in no case failed to give dramatic amelioration of symptoms and prompt (within forty-eight hours) reduction in pyrexia and other signs. The dosage employed was 600,000 units four-hourly for five days.

I hope this letter may dissuade others from following the non-antibiotic régime suggested by Dr. Fairburn and Dr. Semple.

Dublin. LEWIS CLEIN.

THE HOSPITAL STAPHYLOCOCCUS

SIR,—In your issue of Jan. 7 Dr. Brodie and his colleagues report finding that the carrier-rate of staphylococci was doubled as a result of admission to hospital, and suggest that pseudomembranous enterocolitis in the first eight days after partial gastrectomy may be explained by the frequency of antibiotic-resistant (serotype ac/–) staphylococci.

That the hospital reservoir of staphylococci, rather than the strains carried by patients on admission, is in fact the main source of infection in staphylococcal enterocolitis is strongly suggested by evidence recently obtained at the Surgical University Clinic in Berne.

In 10 out of 17 cases seen between June and December, 1955, a complete investigation was done, consisting of nose-and-throat swabs with tests for antibiotic sensitivity on admission, examination of the fæces at the onset of the disease, and (thanks to the kind assistance of Dr. R. E. O. Williams, of Colindale) bacteriophage typing. The results showed that 2 cases were due to endogenous superinfection of the gastro-intestinal tract from the nose with strains resistant to penicillin, streptomycin, and tetracyclines. The remaining 8 cases were, however, caused by cross-infection—in 7 cases with the same "house type" (phage combination 7/47/54/77, with minor deviations in some cases). This "house type" was encountered altogether 9 times over a period of four and a half months on three different wards. 1 case was traced directly to a member of the nursing staff harbouring this strain in the nose. We were fortunate enough not to lose any patients in this series. 5 cases were treated with erythromycin, and 12 with the new antibiotic 'Rovamycin' ('Spiramycin').[1]

A. SENN
Berne, Switzerland. P. LUNDSGAARD-HANSEN.

THE MUNDESLEY SANATORIUM: A DISCLAIMER

SIR,—As Mark Twain said on a similar occasion, "Report of demise greatly exaggerated." Like all private sanatoria and most National Health Service sanatoria we have had to close whole blocks from lack of patients, and the prospects of survival as an establishment for the treatment of pulmonary tuberculosis are by no means rosy; but we have every intention of carrying on a bit longer.

Mundesley was one of the first British private sanatoria to open 57 years ago, and we rather hoped to be among the last to close.

The Sanatorium, Mundesley, Norfolk. E. C. WYNNE-EDWARDS GEORGE DAY.

1. Senn, A., Lundsgaard-Hansen, P. *Helv. med. acta* (in the press).

Obituary

JOHN GEORGE FOSTER
O.B.E., B.A., M.B. Dubl.

Colonel Foster, who died on Jan. 13 at the age of 83 in Queen Alexandra's Military Hospital, London, had served in the Royal Army Medical Corps for nearly forty years. His retirement in 1937 he regarded only as an opportunity for service of a different kind, and as secretary of the Corps's charitable funds and as its historian he continued to work for it with devotion, kindliness, and scholarship.

He was born in Athlone and graduated M.B. from Trinity College, Dublin, in 1896. Four years later he joined the R.A.M.C. During the South African war he saw active service in Cape Colony, Orange River Colony, and the Transvaal. In the first world war he served in Mesopotamia till 1920. He was three times mentioned in despatches and received the brevet rank of lieut.-colonel. He was appointed O.B.E. in 1919.

In 1929 he took over the secretaryship of the R.A.M.C. Benevolent Society and the R.A.M.C. Fund, and he continued this work throughout the second world war, visiting his office daily, whatever the state of the blitz might be. An operation for the removal of an eye in 1944 he allowed to be only a temporary handicap. "It causes errors in typing," he wrote, "but I hope I shall surmount this very quickly."

As a historian he was responsible for part of the roll of the Army Medical Services which goes back to 1666. Foster's Roll, which covers the years from 1898 to 1933, will be a fitting memorial to its compiler. From the records which he had gathered for this work and from his own wide knowledge of the Corps, he had for many years helped us in preparing obituaries of serving officers. He was also an authority on military medals and decorations, and he had lately given his own fine collection to the R.A.M.C. historical museum.

A colleague writes: "By the death of Colonel Foster all ranks of the R.A.M.C. have lost a real friend. For the 20 years he was secretary of the R.A.M.C. Benevolent Society and the R.A.M.C. Fund, I was closely associated with him on their committees and I would like to record what a devoted secretary he was and how deeply interested in his work. He would spare no trouble in seeking information which might enable officers, other ranks, or their families who were found to be in distress or in need to receive such help as could be granted to them. Each case became his personal interest. He possessed in a remarkable degree the faculty of detecting an applicant for help whose case was not genuine. How great a friend he was to the R.A.M.C. may not, I fear, be fully realised, because he was a quiet and unassuming man, very kindly and considerate, who shunned the limelight and worked unobtrusively. He showed his interest in the Army generally by his knowledge of its history, which he implemented by a magnificent collection of British war medals."

A Scandinavian correspondent informs us of the death last month in Sweden of Dr. IVAN BRATT, well known for his system of alcohol control known as Bratt's system. Soon after qualifying in medicine at the age of 25 he threw himself into the discussions raging over the abuse of alcohol in Sweden. His system of alcohol control hinged on the right of every individual to a certain amount of alcohol, but only so much and no more for each. Sweden has only recently abandoned this system in favour of greater freedom of alcohol consumption. Bratt also made his mark as director of Svenska Kullager Fabriken and in this post he showed great administrative ability. He retired during the war, and he spent his last years on his estate in Södermanland, Sweden. His life was saddened in 1940 by the death of his wife in a German air attack outside Paris, during which he himself was also wounded by a bomb splinter. He was 77 years of age.

Births, Marriages, and Deaths

BIRTHS

DICKINSON.—On Feb. 6, at University College Hospital, London, to Elizabeth, wife of Dr. C. J. Dickinson, son—Mark John.

Notes and News

WORLD HEALTH ORGANISATION

THE Executive Board of the World Health Organisation, whose 17th session opened in Geneva on Jan. 17, under the chairmanship of Dr. Sabeeh Al-Wahbi (Iraq),[1] has recommended a budget of $11 million for the Organisation in 1957. This represents an increase of $800,000 over the current budget. The board unanimously resolved that the time is ripe for large-scale campaigns against leprosy in every country affected by the disease. The board also decided that W.H.O. should assume responsibility for coördinating and stimulating research into resistance to insecticides. Dr. M. G. Candau, director-general of W.H.O., declared: "Should the degree of resistance in vectors of diseases such as malaria, yellow fever, plague, and typhus reach the point where control by the available insecticides is no longer possible, disastrous results from a health viewpoint will inevitably occur in many parts of the world." The board asked the director-general to explore the possibility of organising centres for the histopathological examination of cancer tissues.

WELLCOME TRUST

THE Wellcome Trustees have announced two further awards. They have made a grant of £80,000 to the Postgraduate Medical School of London, at Hammersmith, towards the cost of building and equipping laboratories for experimental research bearing upon problems of surgery. The new laboratories will form part of the department of surgery, of which Prof. Ian Aird is director. Another grant goes to McGill University, Montreal, of $140,000 (approximately £50,000) to enable a Wellcome research professorship in anæsthesia to be created in the medical school. The grant provides for the stipend of the chair and the research expenses of its department for five years, and for the initial equipment of its laboratories.

PRESCRIPTIONS FOR POTASSIUM SALTS

Boots Pure Drug Co. Ltd. inform us that, with the more widespread use of cortisone and its allied steroids, doctors are prescribing potassium chloride in tablet form in order to combat hypokalæmia. Prescriptions are being handed in at chemists' shops for tab. pot. chlor., but such an abbreviation is not used in the *British Pharmacopœia*, so there is some confusion as to whether potassium chlorate or potassium chloride is intended. Messrs. Boots have now asked their branches to be particularly careful over this point, and have suggested that it is the chloride which is more likely to be required than the chlorate. The company remarks that, since internal administration of potassium chlorate may be dangerous, doctors should use the official terms—tab. pot. chlorid. or tab. pot. chloras.

A DEFENCE OF MASS RADIOGRAPHY

Prof. A. P. Thomson, speaking to the Birmingham Regional Hospital Board on Jan. 16, rebutted three criticisms of mass radiography—that it is expensive, that it leads to errors in diagnosis, and that it tends to make doctors neglect the clinical examination of their patients. There could, he said, be no doubt about the value of the service: in the Birmingham region the report of the Regional Director showed that in 1954, mass radiography revealed no fewer than 1357 patients with acute tuberculosis, 556 of whom had tubercle bacilli in their sputum. Mass radiography was responsible for more than a third of all notifications of respiratory tuberculosis in Birmingham.

The aim of mass radiography was not to make diagnoses but to discover abnormalities such as a "shadow" which required further investigation: the diagnoses were made by physicians to whom the patients were referred. Though sometimes a patient was told about a "shadow on the lung" which later was shown to be of no significance, any distress caused did not last long; and this small disadvantage was more than offset by the protection the service gave to the public, and to the reassurance it afforded those people who needlessly feared that they had tuberculosis.

Among the patients in the Birmingham area examined by mass radiography in 1954, tuberculosis was found nearly seven times more frequently in those referred by general practitioners than in those in all the other groups. This suggested that doctors did not neglect to examine their patients before referring them for radiography.

Far from being expensive, the average cost of the mass-radiography service for each person in the Birmingham region was 3*d*. a year, which was cheap for a service which was in effect an important branch of preventive medicine. Dr. Thomson maintained that, at the present time, mass radiography afforded one of the best means of reducing the incidence of tuberculosis, by detecting it in its early stages and thus allowing infected patients to be isolated and treated promptly.

1. See *Lancet*, Feb. 4, 1956, p. 251.

OUTPATIENT DEPARTMENTS IN SCOTLAND

IN 1954 hospital authorities in Scotland surveyed waiting-times at outpatient departments. On the basis of the information thus collected, and of other reports, the Secretary of State for Scotland has issued a memorandum [1] on the organisation of outpatient departments.

Outpatient departments, says the memorandum, should be organised on the assumption that the present demand will be maintained or will increase. Of 162 hospitals and clinics reported on, 93, with outpatient attendances estimated at 3,140,000 a year, had appointment systems for all attendances except casualties and self-referred patients; 36, with 3,420,000 attendances, had appointment systems for more than half of their attendances; and 33, with 430,000 attendances, either had no appointment system at all or had one for less than half of their attendances. Those hospitals or departments where an appointment system is in operation have much the lowest average waiting-times. It is clear that such systems are practicable in all specialties; and "where the operation of an appointment system is accompanied by a lengthy waiting period for appointments . . . the fault is not the appointment system but the inadequacy of the department." Wherever possible a system of individual rather than block appointments should be used.

COST OF INPATIENTS IN SCOTLAND

THE average cost of maintaining a patient in hospital in Scotland, excluding the cost of the specialist service and overhead charges for empty beds, was £8 7*s*. 3*d*. a week in the year ended March 31, 1955, according to the annual analysis of the running costs of Scottish hospitals.[2] This average was made up as follows:

	£	*s*.	*d*.
Staff salaries and wages	4	5	2
Provisions	1	9	0
Drugs, dressings, patients' clothing, bedding, &c.		13	6
Domestic repairs, laundry, heat, light, power, &c.	1	1	7
Overheads, including maintenance of buildings and grounds		12	0
Board of management administration		6	0

The average weekly costs of maintaining and treating a patient in the different types of hospitals in 1954–55 were:

	£	*s*.	*d*.
General: major teaching	12	8	1
" over 300 beds	11	12	4
" 51–300 beds	12	0	10
" 1–50 beds	9	18	7
" chronic sick	7	5	8
Convalescent hospitals and homes	6	8	7
Isolation hospitals	6	12	0
Sanatoria	9	3	0
Isolation and tuberculosis hospitals	10	0	2
Maternity hospitals and homes	15	11	1
Mental hospitals	5	0	10
Mental-deficiency institutions	4	12	2
Other hospitals	9	10	0

The average cost of treating each outpatient was 5*s*. per attendance.

RESEARCH ON TRACHOMA IN THE MIDDLE EAST

A VIRUS laboratory is being built in Jordan by the Order of the Hospital of St. John of Jerusalem for research on the virus of trachoma, which, it is estimated, affects a quarter of the world's population and causes more visual disability and blindness than any other disease. Sir Stewart Duke-Elder, the hospitaller of the Order, said on Jan. 30 that it was hoped that the laboratory would be working by the end of March under the direction of a research team consisting of a clinician, a virologist, and a bacteriologist.

Until recently, Sir Stewart said, trachoma was treated by cauterisation by copper and other metals—the kind of treatment used four thousand years ago. Antibiotics have

1. S.H.M. 56/7.
2. H.M. Stationery Office. 9*s*. 6*d*.

improved treatment by clearing secondary infection, but no drug is known to be specific against the trachoma virus, which has never been satisfactorily isolated, and which does not survive the journey to laboratories in other countries. The new laboratory will be the first built in a trachomatous area, and its position is medically ideal because most of the 400,000 refugees in Jordan have trachoma.

The Order of St. John has maintained a hospital in Jerusalem since the 7th century; the present hospital was attended by no less than 183,000 outpatients last year; but it is too small, and land has been bought and building plans are far advanced for a new 75-bed hospital, which will take part in the trachoma investigation. The research will be sponsored and guided by the Medical Research Council, and the research team will work in association with the virus laboratories of the Lister Institute and the Institute of Ophthalmology in London. Financial support has been received from the British and Middle East governments, the World Health Organisation, local oil companies, and the Wellcome Trustees, and, with its own contribution of £290,000, the Order has sufficient funds to launch the research scheme and maintain it for seven years.

APPROVED NAMES FOR DRUGS

THE British Pharmacopœia Commission has issued the following new supplementary list of approved names:

Approved name	*Other names*
Busulphan	1 : 4-Dimethanesulphonyloxybutane Myleran
Buthalitone Sodium	A mixture of 100 parts by weight of the mono-sodium derivative of 5-allyl-5-*iso*butyl-2-thiobarbituric acid and 6 parts by weight of exsiccated sodium carbonate Transithal
Diacetylnalorphine	Diacetyl-*N*-allylnormorphine
Halopyramine	*N*-*p*-Chlorobenzyl-*N*′*N*′-dimethyl-*N*-2-pyridylethylenediamine Synopen is the hydrochloride
Nicoumalone	3-(2-Acetyl-1-*p*-nitrophenylethyl)-4-hydroxycoumarin Sinthrome
Probenecid	*p*-(Di-*n*-propylsulphamoyl) benzoic acid Benemid
Promethoestrol	3 : 4-Di-(4-hydroxy-3-methylphenyl) hexane
Propylhexedrine	1-*cyclo*Hexyl-2-methylaminopropane Benzedrex
Trimetaphan	4 : 4-Dibenzyl-5-oxo-1-thia-4 : 6-diazatricyclo [6 : 3 : 0 : $0^{2,11}$] undecanium Arfonad is the (+)-camphorsulphonate
Veragide	1-*iso*Nicotinoyl-2-veratrylidenehydrazine

University of Cambridge

On Jan. 26 the following degrees were conferred:

M.B., B.Chir.—D. J. Bartlett (in person); P. G. A. Bloomer, F. L. Cole, J. F. H. Keighley, S. M. Madeloff, D. J. Roberts, D. W. T. Roberts, M. P. Sherwood (by proxy).

M.B.—A. H. Bottomley, A. E. Boyo, Donald King-Price, B. W. G. Orr, Samuel Priestman (in person); Joyce F. Baron, N. L. Burrell, Frank Heyes, J. P. E. Hubbard, J. H. L. Lloyd-Thomas, W. J. E. McKee, D. J. Moorhouse, N. H. Moynihan (by proxy).

Royal College of Physicians of London

On Tuesday and Thursday, March 13 and 15, at 5 P.M., Prof. A. C. Frazer will deliver the Oliver-Sharpey lectures, when his subject will be intestinal absorption in man. The lectures will be given at the college, Pall Mall East, S.W.1.

Biochemical Society

On Saturday, Feb. 18, at 11 A.M., at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1, this society will hold a symposium on the structure of nucleic acids and their rôle in protein synthesis.

Royal Statistical Society

On Tuesday, Feb. 28, at 5.30 P.M., the medical section of this society will hold a meeting at the Westminster Medical School, Horseferry Road, London, S.W.1, when Mr. F. Le Gros Clark will speak on Ageing in Industry.

Course on Chronic Rheumatic Diseases

A course on this subject will be held at the rheumatism unit of St. Stephen's Hospital, Fulham Road, London, S.W.10, on Saturday and Sunday, March 17 and 18, 1956. The opening speaker will be Prof. D. V. Davies, whose subject will be the Capsule and Synovial Membrane of Joints. The following will also speak: Dr. Francis Bach, Dr. Grace Batten, Dr. Raymond Daley, Dr. Phillip Ellman, Mr. H. E. Harding, Dr. F. Dudley Hart, Dr. J. A. Purser, Dr. P. D. Samman, Dr. Gordon Signy. Further particulars can be had from the secretary, Fellowship of Postgraduate Medicine, 60, Portland Place, W.1.

British Tuberculosis Association

This association is to hold a joint meeting with the Irish Tuberculosis Society in Dublin on May 4 and 5. The programme will include papers on primary tuberculosis in adults, the relation between cardiovascular and chronic lung diseases, and the M.R.C. chemotherapeutic trials. Further particulars may be had from the administrative secretary of the association, 59, Portland Place, London, W.1.

British Diabetic Association

The annual Banting meeting of this association will be held on July 6 and 7 at King's College Hospital, Denmark Hill, London, S.E.5. This year it will consist of a postgraduate course for doctors in charge of diabetic clinics, registrars, and others. Early application should be made to the Association at 152, Harley Street, London, W.1.

Arthur Hall Memorial Lecture

In memory of the late Sir Arthur Hall the Sheffield Medico-Chirurgical Society and other bodies in Sheffield have endowed a triennial memorial lecture. The first lecture is to be delivered by Sir Francis Walshe, F.R.S., on Thursday, March 22, at 8 P.M. at the University of Sheffield. His subject will be Medicine in the Framework of the University. Applications for tickets should be made to the registrar of the university, Sheffield 10, before March 10.

National Association for Maternal and Child Welfare

The annual conference of this association will be held at Cardiff from June 20 to 21. The theme of the meeting will be Safeguarding the Family, and the speakers will include Prof. Dugald Baird, Prof. Wilfrid Gaisford, Prof. A. G. Watkins, Dr. Elenora Simpson, Dr. Harold Cohen, and Dr. J. Stevenson Logan. Further particulars may be had from the secretary of the association, Tavistock House North, Tavistock Square, London, W.C.1.

Nutrition Society

On Saturday, March 10, at the London Medical College, Turner Street, E.1, this society will hold a symposium on Diet and Anæmia. The chair will be taken by Sir Stanley Davidson and the speakers will include Dr. P. B. B. Gatenby, Dr. G. R. Wadsworth, Prof. B. S. Platt, and Prof. A. W. Woodruff. Further particulars may be had from the hon. programmes secretary of the society, Dr. R. J. L. Allen, c/o Beecham Foods Limited, Brentford, Middlesex.

Laboratory Animals Bureau

The ninth congress of this bureau will be held at the Royal Veterinary College, London, on Wednesday and Thursday, April 11 and 12. On Friday, April 13, there will be a symposium, under the chairmanship of Prof. J. W. Howie, on infections in laboratory animals. Further particulars may be had from the bureau, Medical Research Council Laboratories, Holly Hill, London, N.W.3.

Diencephalic Control of Endocrine Activity

The Milan section of the Italian Society of Experimental Biology is to hold an international symposium on this subject from May 3 to 5 under the presidency of Prof. W. R. Hess and Prof. Emilio Trabucchi. Further particulars may be had from Dr. S. B. Curri and Dr. L. Martini, c/o, Instituto Farmacologia, Universita di Milano, Via Andrea del Sarto, 21, Milan.

Compulsory Nursing?

The difficulties of many hospitals in recruiting nurses were discussed last month at a meeting of the Wakefield A Group Hospital Management Committee (*Yorkshire Post*, Jan. 26, 1956). Mr. Lawrence Richmond, the chairman, said that the position was so grave that it should be dealt with at a national level. He was tempted to ask whether the time might not come when compulsory service might have to be contemplated, under which young women could be directed to nursing in a category equivalent to a State-enrolled assistant nurse. Dr. Moray Melvin, the vice-chairman, said that one small measure after another had been tried but they had never got down to anything really effective. "At the back of my mind I have felt that we may be driven to compulsion." After discussion the committee decided to ask the Ministry of Health to take immediate steps to examine salary grades and conditions of service, to ascertain whether they are such as to attract young women to nursing.

A Medical High Commissioner

The Queen has appointed Mr. Walter Elliot to be High Commissioner to the General Assembly of the Church of Scotland, which meets in Edinburgh on May 22.

Society of Medical Officers of Health

Sir Selwyn Selwyn-Clarke has been appointed medical secretary of this society in succession to Dr. Frederick Hall. Sir Selwyn has held the posts of director of medical services, Hong-Kong, and chief health officer, Federated Malay States, and since his retirement from the governorship of the Seychelles he has been a principal medical officer at the Ministry of Health.

Shortage of Mental Nurses in Lancashire

At the opening in Manchester of an exhibition intended to promote the recruitment of mental nurses, protests were made by the staff of local hospitals against their pay and conditions. The *Times* (Jan. 31) reports that 60 pickets paraded with sandwich-boards. At the opening of the exhibition Mr. N. M. Agnew, chairman of the Manchester Regional Hospital Board, said that, subject to the General Nursing Council's approval, his board was to introduce a four-year course for student nurses to spend part of their training at a general hospital and part at a mental hospital.

Changes in Industrial Injuries Benefits

The Minister of Pensions and National Insurance has accepted two recent recommendations by the Industrial Injuries Advisory Council (Cmd. 9673 and 9674). The changes came into force on Feb. 8.

The conditions for payment of industrial injuries benefit for byssinosis are to be relaxed. The period of qualifying employment in the cotton industry has been reduced from 20 years to 10 years, and the present condition that benefit cannot be paid unless the disablement is assessed at 50% or more has been removed.

People whose occupations involve exposure to cadmium fumes are now to be insured under the Industrial Injuries Scheme against chronic, as well as acute, cadmium-poisoning.

Special Times for Certificates?

Doctors in large urban parishes in the Doncaster area are to be asked to consider a plan for reducing overcrowding in their surgeries. Doncaster public-health committee suggest that there would be more room for patients requiring treatment if special times were allocated to those wanting sickness certificates only; one proposal is that doctors might set aside half an hour at the beginning or the end of the normal surgery hours for dealing with certificates. Dr. R. W. L. Ward, public-relations officer to the Doncaster division of the British Medical Association, is reported to have said that, in his opinion, most doctors would oppose any such distinction between patients.

Appointments

DISMORR, P. C., M.R.C.S., D.P.H.: appointed factory doctor, Erith, Kent.

FEARNLEY, M. E., D.SC., M.D. Lond., M.R.C.P., D.PHYS.MED.: part-time consultant in physical medicine, St. George's Hospital, London.

JEFFERSON, K. E., M.B. Camb., M.R.C.P., F.F.R., D.M.R.D.: part-time consultant radiologist, St. George's Hospital, London.

LANCASTER, N. P., M.D. Manc., D.P.M.: asst. psychiatrist, Deva Hospital, near Chester.

MAIR, MARJORIE, M.B. Brist., B.SC. Wales: asst. M.O.H., Bristol.

WRIGHT, E. W., M.B. Edin., D.P.H.: deputy M.O.H. and principal school M.O., Eastbourne.

YOUNG, S. M., L.R.C.P.E., D.P.H.: deputy M.O.H. and school M.O., Southport.

East Anglian Regional Hospital Board:

ALAM, B., M.B. Dacca: registrar in E.N.T. surgery, Ipswich and East Suffolk Hospital.

DOWNES, M. M., M.B. St. And., M.R.C.O.G.: senior registrar in obstetrics and gynæcology, United Norwich Hospitals.

KANE, E. P., M.B. Belf., D.C.H.: registrar in psychiatry, East Suffolk mental hospitals.

South-Western Regional Hospital Board:

BUTLER, N. G. P., M.B. Lond., F.F.A.R.C.S., D.A.: consultant anæsthetist, Exeter clinical area.

GUNATILLEKE, D. E., M.B. Ceylon, F.R.C.S.: registrar in obstetrics and gynæcology, Royal Devon and Exeter Hospital, Exeter.

MARTLEW, R. H., M.D. Lpool, D.P.M.: consultant psychiatrist, Bristol clinical area.

MUDREWICZ, JULIAN, M.B. Polish Sch. of Med., Edin.: registrar in obstetrics and gynæcology, Camborne-Redruth Miners' and General Hospital, Redruth.

WEYHAUSEN, E. G., M.B. Dubl.: registrar in E.N.T. surgery, South Devon and Cornwall Hospital, Plymouth.

WRIGHT, D. W., M.B. Brist.: medical registrar, Southmead Hospital, Bristol.

General Medical Council

An election for 11 members of the General Medical Council will be held shortly. 8 members, of whom 1 must live in Wales, will be elected to represent the doctors of England and Wales, 2 to represent Scotland, and 1 Ireland. Nominations must be sent in by Feb. 29, and further particulars will be found in our advertisement columns.

The 13th volume of the *Transactions of the Hunterian Society*, which has now been published, covers the 1954–55 session. It includes the Hunterian lecture on pallor in the inflammatory syndrome which Dr. Jack Adams-Ray, of Stockholm, was prevented by ill health from delivering, and Dr. Philip Hopkins's prize essay on the management of the climacteric in general practice.

Diary of the Week

FEB. 12 TO 18

Monday, 13th

POSTGRADUATE MEDICAL SCHOOL OF LONDON, Ducane Road, W.12
4 P.M. Dr. Brian Ackner: Emotions and the Cardiovascular System.

Tuesday, 14th

BRITISH POSTGRADUATE MEDICAL FEDERATION
5.30 P.M. (The London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1.) Dr. T. R. R. Mann, F.R.S.: Mammalian Semen.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole Street, W.1
5.30 P.M. *Experimental Medicine.* Dr. L. F. Lamerton, Dr. Mary Smith, Dr. M. S. R. Hutt: Clinical and Experimental Studies with Radioactive Iron.
8 P.M. *Psychiatry.* Prof. E. W. Anderson, Dr. W. H. Trethowan, Mr. J. C. Kenna: An Experimental Approach to the Problem of Simulation in Mental Disorder.

ROYAL ARMY MEDICAL COLLEGE, Millbank, S.W.1
5 P.M. Sir Arthur Porritt: Medicine and the Olympic Games.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.2
5 P.M. Dr. A. Melvin Ramsay: Post-abortum Sepsis and Anuria.

INSTITUTE OF DERMATOLOGY, Lisle Street, W.C.2
5.30 P.M. Dr. P. J. Hare: Disorders of Pigmentation.

CHELSEA CLINICAL SOCIETY
8.30 P.M. (Rembrandt Hotel, Thurloe Place, S.W.7.) Mr. Green-Armytage, Mr. Reynold Boyd: Civilisation and Sterilisation.

MANCHESTER MEDICAL SOCIETY
8 P.M. (Medical School, University of Manchester.) *Surgery.* Mr. R. T. Johnson: Surgical Principles in the Treatment of Intracranial Bleeding.

Wednesday, 15th

ROYAL SOCIETY OF MEDICINE
8.15 P.M. *General Practice.* Dr. Guy Daynes: Bread and Tears—Naughtiness, Depression, and Fits Due to Wheat Sensitivity.

ST. MARYLEBONE HOSPITAL FOR PSYCHIATRY AND CHILD GUIDANCE, 48, Cosway Street, N.W.1
5 P.M. Dr. Walter Schindler: Group Psychotherapy.

INSTITUTE OF DISEASES OF THE CHEST, Brompton, S.W.3
5 P.M. Dr. R. W. Riddell: Significance of Bacterial Resistance in Tuberculosis.

INSTITUTE OF DERMATOLOGY
5.30 P.M. Dr. H. Haber: Cellular Nævi and Melanomas.

OXFORD UNIVERSITY
5 P.M. (Radcliffe Infirmary.) Dr. Rae Gilchrist: Clinical Aspects of Coronary-artery Disease.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS, 242, St. Vincent Street, Glasgow, C.2
5 P.M. Dr. A. L. Goodall: Hormones and Carcinoma of the Breast.

Thursday, 16th

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.2
5 P.M. Mr. F. T. Graves: Anatomy of the Intrarenal Arteries in Health and Disease. (Hunterian lecture.)

BRITISH POSTGRADUATE MEDICAL FEDERATION
5.30 P.M. (London School of Hygiene and Tropical Medicine.) Mr. E. S. Horning D.SC.: Anomalies in Endocrine Carcinogenesis.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 26, Portland Place, W.1
7.30 P.M. Dr. A. C. Allison: Sicklæmia.

MANCHESTER MEDICAL SOCIETY
8 P.M. *Anæsthetics.* Dr. John Gillies: Hypotension and the Operative Risk.

Friday, 17th

ROYAL SOCIETY OF MEDICINE
8.15 P.M. *Radiology and Ophthalmology.* Mr. A. G. Cross, Dr. J. W. Cowie, Dr. M. Lederman: Orbital Tumours.

POSTGRADUATE MEDICAL SCHOOL OF LONDON
NOON. Sir Henry Cohen: Systemic Lupus Erythematosus.

FACULTY OF RADIOLOGISTS
5 P.M. (Royal College of Surgeons.) *Radiotherapy.* Mr. F. C. W. Capps, Dr. R. A. Kemp Harper, Mr. I. G. Williams: Tumour of the Glomus Jugulare.

BRITISH TUBERCULOSIS ASSOCIATION
5 P.M. (26, Portland Place, W.1.) Sir Henry Cohen, Dr. Philip Ellman: Pulmonary Manifestations in the Systemic Collagen Diseases.

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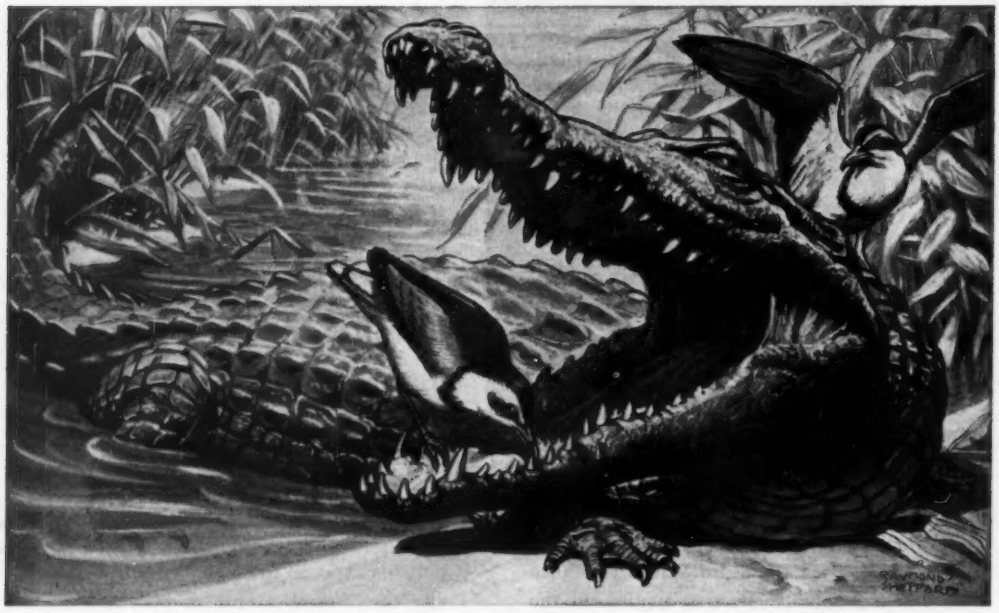

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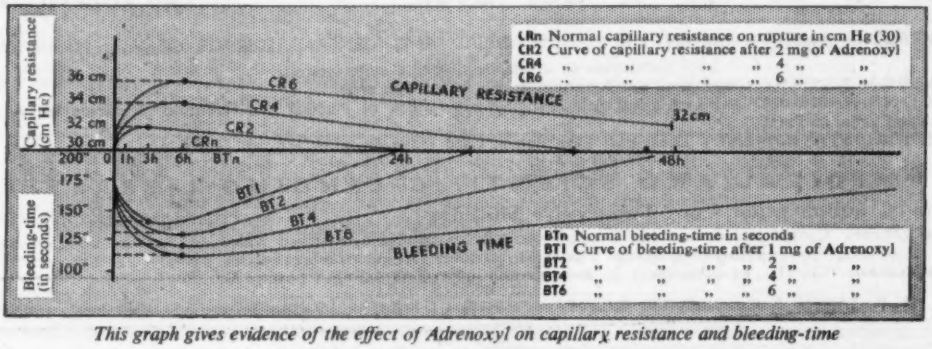

This graph gives evidence of the effect of Adrenoxyl on capillary resistance and bleeding-time

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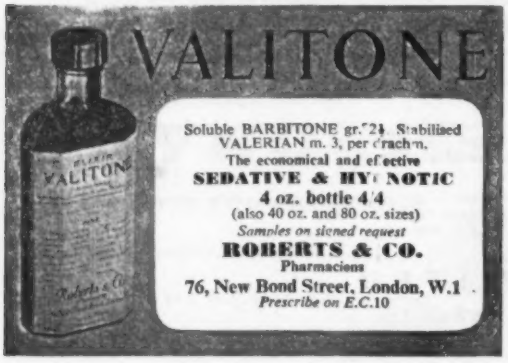

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ROYAL COLLEGE OF SURGEONS OF ENGLAND

BRITISH POSTGRADUATE MEDICAL FEDERATION
(UNIVERSITY OF LONDON)
INSTITUTE OF BASIC MEDICAL SCIENCES

Applications are invited for the post of SENIOR LECTURER in the Department of Pathology. The successful applicant will be expected to take part in the teaching activities of the Department and ample time and facilities will be available for research work. Candidates should have had a training in general pathology and should possess a higher degree. Interest and experience in histochemistry would be an advantage. Salary will be within the University scales, together with membership of the F.S.S.U. and family allowances. The commencing salary will be determined by the age, qualifications, and experience of the successful candidate.

Applications (12 copies), together with the names of 2 referees, should be sent not later than 24th February, 1956, to Mr. W. F. DAVIS, Secretary, Institute of Basic Medical Sciences, Royal College of Surgeons of England, Lincoln's Inn-fields, W.C.2, from whom further particulars may be obtained.

INSTITUTE OF LARYNGOLOGY AND OTOLOGY

(UNIVERSITY OF LONDON)
330/332, Gray's Inn-road, London, W.C.1

COURSE FOR MEDICAL OFFICERS OF HEALTH (especially those concerned with Maternal and Child Welfare) and School Medical Officers on the deaf child—early diagnosis ; care and training ; parent education ; on 7TH, 8TH and 9TH MARCH, 1956. Fee £4 4s.

WEEK-END COURSE IN ENDOSCOPY for practising members of the specialty and senior students—16TH, 17TH and 18TH MARCH, 1956. The Course will include practical work. Fee £5 5s.

Detailed syllabus obtainable from the Dean.

FACULTY OF RADIOLOGISTS

D.M.R.D. AND D.M.R.T. (R.C.P. LOND., R.C.S. ENG.)

The next COURSES in London for candidates for the D.M.R.D. or D.M.R.T. (R.C.P. Lond., R.C.S. Eng.), organised by the Faculty in coöperation with Medical Schools and Hospitals of the University of London, Metropolitan Regional Hospitals, and the British Postgraduate Medical Federation, will commence in OCTOBER, 1956. The courses are full-time (fee 85 guineas).

Application forms and further particulars may be obtained from the Assistant Director, British Postgraduate Medical Federation, 18, Guilford-street, London, W.C.1, to whom all inquiries should be addressed.

The closing date for application from overseas is 31st May, 1956.

EDINBURGH POST-GRADUATE BOARD FOR MEDICINE

GENERAL SURGERY

A 3 months course of post-graduate surgery suitable for surgeons requiring a refresher course in the current outlook on general surgery or for graduates preparing to specialise in surgery, starts on 19TH MARCH and 1ST OCTOBER, 1956. The programme has been re-organised so as to provide coördinated clinical and systematic instruction in general surgery wards and specialised surgical units in Edinburgh. Fee £31 10s.

MEDICAL SCIENCES

A 3 months course in Applied Anatomy, Physiology, Pathology, Bacteriology and Biochemistry will begin on 25TH JUNE, 1956. This course is suitable for post-graduates wishing to take the Primary Fellowship Examination, as a final preparation in these subjects. Considerable basic knowledge is highly desirable prior to taking this course. Fee £31 10s.

A course in the Basic Sciences (Anatomy, Physiology, Pathology, including Bacteriology) will be conducted by the Fellows of the Royal College of Surgeons, and others, under the ægis of the Edinburgh Post-graduate Board for Medicine. This course, comprising lectures and demonstrations, will begin on 15TH OCTOBER, 1956, and continue for 10 weeks. Fee £26 5s.

INTERNAL MEDICINE

Courses lasting 12 weeks, suitable for graduates wishing a refresher course, or to specialise in Medicine, begin on 26TH MARCH and 24TH SEPTEMBER, 1956. These courses consist of 320 hours instruction, comprising lectures, clinical demonstrations and ward visits. Fee £31 10s.

Additional instruction in Clinical Paediatrics and in Tropical Medicine is arranged in conjunction with the course in Medicine, for which there is a small fee ; the numbers are limited.

Applications for enrolment should be addressed to the Director of Post-Graduate Studies, Surgeons' Hall, Edinburgh, 8, supplying particulars of qualifications and post-graduate experience.

NOTICE OF ELECTION

GENERAL MEDICAL COUNCIL
MEDICAL ACTS, 1886 AND 1950

Notice is hereby given, that pursuant to the Medical Acts, 1886 and 1950, an Election of 8 Members of the General Medical Council (of whom 1 must be elected as a person resident in Wales) to represent the registered medical practitioners resident in England (excluding the County of Monmouth) and Wales (including the County of Monmouth) is about to be held.

Every registered medical practitioner is qualified to be nominated as a candidate.

Each candidate must be nominated by a separate nomination paper.

Every registered medical practitioner resident in England (excluding the County of Monmouth) and Wales (including the County of Monmouth) is entitled to take part in nominating 8 candidates.

Every nomination paper must state the name, registered address, and registered qualification or qualifications of the candidate nominated ; it must be signed by not fewer than 12 registered medical practitioners, resident in England (excluding the County of Monmouth) or Wales (including the County of Monmouth), as nominating such candidate ; and the registered address and registered qualification or qualifications of each one so signing must be appended to his signature.

Every nomination paper, accompanied by a declaration in writing signed by the candidate, acknowledging that he consents to be nominated, must be delivered by post or otherwise, on or before the 29th day of February, 1956, addressed to The Registrar of the Branch Council for England, 44, Hallam-street, London, W.1, where forms of nomination papers may, on application by post or otherwise, be obtained.

Every nomination paper in respect of which any of these Regulations has not been complied with, or which is not received at 44, Hallam-street, London, W.1, on or before the 29th day of February, 1956, will be invalid.

DAVID CAMPBELL, Returning Officer.

NOTICE OF ELECTION

MEDICAL ACTS, 1886 AND 1950

Notice is hereby given, that pursuant to the Medical Acts, 1886 and 1950, an Election of 2 Members of the General Medical Council to represent the registered medical practitioners resident in Scotland is about to be held.

Every registered medical practitioner is qualified to be nominated as a candidate. Each candidate must be nominated by a separate nomination paper.

Every registered medical practitioner resident in Scotland is entitled to take part in nominating 1 candidate.

Every nomination paper must state the name, registered address, and registered qualification or qualifications of the candidate nominated ; it must be signed by not fewer than 12 registered medical practitioners, resident in Scotland, as nominating such candidate; and the registered address and registered qualification or qualifications of each one so signing must be appended to his signature.

Every nomination paper, accompanied by a declaration in writing signed by the candidate, acknowledging that he consents to be nominated, must be delivered, by post or otherwise, on or before Wednesday, the 29th day of February, 1956, addressed to the Registrar of the Branch Council for Scotland, 8, Queen-street, Edinburgh, 2, where forms of nomination papers may, on application by post or otherwise, be obtained.

Every nomination paper in respect of which any of these Regulations has not been complied with, or which is not received at 8, Queen-street, Edinburgh, 2, on or before the 29th day of February, 1956, will be invalid.

DAVID CAMPBELL, Returning Officer.

NOTICE OF ELECTION

GENERAL MEDICAL COUNCIL
MEDICAL ACTS, 1886 AND 1950

Notice is hereby given, that pursuant to the Medical Acts, 1886 and 1950, an Election of 1 Member of the General Medical Council to represent the registered medical practitioners resident in Ireland is about to be held.

Every registered medical practitioner is qualified to be nominated as a candidate. Each candidate must be nominated by a separate nomination paper.

Every registered medical practitioner resident in Ireland is entitled to take part in nominating 1 candidate.

Every nomination paper must state the name, registered address, and registered qualification or qualifications of the candidate nominated ; it must be signed by not fewer than 12 registered medical practitioners, resident in Ireland, as nominating such candidate : and the registered address and registered qualification or qualifications of each one so signing must be appended to his signature.

Every nomination paper, accompanied by a declaration in writing signed by the candidate, acknowledging that he consents to be nominated, must be delivered by post or otherwise, on or before the 29th day of February, 1956, addressed to the Registrar of the Branch Council for Ireland, 68, Fitzwilliam-square, Dublin, where forms of nomination papers may, on application by post or otherwise, be obtained.

Every nomination paper in respect of which any of these Regulations has not been complied with, or which is not received at 68, Fitzwilliam-square, Dublin, on or before the 29th day of February, 1956, will be invalid.

DAVID CAMPBELL, Returning Officer.

L.M.S.S.A.

FINAL EXAMINATION : SURGERY, 12th March, 9th April, 14th May, 1956. MEDICINE, PATHOLOGY, 19th March, 16th April, 22nd May, 1956. MIDWIFERY, 20th March, 17th April, 23rd May, 1956. MASTERY OF MIDWIFERY, May and November. DIPLOMA IN INDUSTRIAL HEALTH, July and December.

For regulations apply REGISTRAR, Apothecaries Hall, Black Friars-lane, London, E.C.4.

THE UNIVERSITY OF MANCHESTER. Applications are invited from candidates with medical qualifications registrable in this country, for the post of ASSISTANT LECTURER or DEMONSTRATOR IN PATHOLOGY. Previous experience in pathology is not essential. Duties will consist of teaching and of participation in the morbid anatomy service of Manchester Royal Infirmary. Opportunities will be available for research. Salary scale per annum attached to the post: £700–£100–£1100. Initial salary according to qualifications and experience. Membership of children's allowance scheme and, in the case of an Assistant Lecturer, of F.S.S.U.

Applications should be sent not later than 3rd March, 1956, to the Registrar, the University, Manchester, 13, from whom further particulars and forms of application may be obtained.

UNIVERSITY OF BRISTOL. The University invites applications for the appointment of LECTURER IN CHILD HEALTH. Salary scale £1200–£100–£1750 or £1750–£100–£2400 p.a. according to qualifications and experience, together with superannuation and children's allowances. The successful candidate will be granted an honorary contract with the Board of Governors of the United Bristol Hospitals and with the South-Western Regional Hospital Board as Consultant or Senior Registrar according to qualifications and experience.

The Lecturer will be required to assist in the clinical, practical and theoretical teaching in the Department, and to undertake research related to child health and pædiatrics.

Applications (10 copies), stating age, qualifications and experience and including the names of 3 referees, should reach the undersigned, from whom further particulars may be obtained, not later than 24th February, 1956.

H. C. BUTTERFIELD, Registrar.

The University, Bristol, 8.

THE UNIVERSITY OF SHEFFIELD. Applications are invited for a post of LECTURER IN PUBLIC HEALTH to begin duties as soon as possible. Candidates should hold a D.P.H. or equivalent qualification. Salary scale £800–£100–£1700, with F.S.S.U. provision and family allowance. Initial salary according to qualifications and experience.

Further particulars should be obtained from the Registrar to whom applications (4 copies) should be sent by 10th March, 1956.

UNIVERSITY OF ST. ANDREWS, Queen's College, DUNDEE. Applications are invited for the full-time post of RESEARCH ASSISTANT IN ANÆSTHETICS, to undertake research and clinical work in the investigation of steroid anæsthetics. The person appointed will work in the Department of Anæsthetics and the Department of Pharmacology and Therapeutics. He will be given an Honorary Clinical Assistant appointment in the Dundee Teaching Hospitals and allocated a limited amount of anæsthetic duties. The post is suitable for someone preparing a thesis for a higher degree. Applicants should be registered medical practitioners and possess the F.F.A.R.C.S. The appointment is for 2 years and the salary will be £1100 and £1200 p.a.

Applications, giving full particulars and the names of 3 referees, should be addressed to the Convener of Postgraduate Medical Studies, Queen's College, Dundee.

AUSTRALIA. UNIVERSITY OF QUEENSLAND. Applications are invited for the position of SENIOR LECTURER (CLINICAL) IN MEDICINE. Applicants should have a higher qualification in clinical medicine and preferably some experience of medical research. Salary £A2160–£A2460 p.a.

Further particulars and information as to the method of application are obtainable from the Secretary, Association of Universities of the British Commonwealth, 36, Gordon-square, London, W.C.1. Applications close, in Australia and London, on 16th March, 1956.

UNIVERSITY OF CAPE TOWN, South Africa. Applications are invited for the full-time post of LECTURER IN PHYSIOLOGY which will fall vacant in July, 1956. The successful candidate will assist in the teaching of medical and science students and will have ample opportunity for research. A medical qualification is desirable. The salary scale is £850–£50–£1150, plus a temporary cost-of-living allowance for a married man (at present £234 p.a.).

Applications (with copies of testimonials) should state age, qualifications, experience, publications, and research interests, and should give the names of 2 referees whom the University may consult. 2 copies of the application should reach the Secretary, Association of Universities of the British Commonwealth, 36, Gordon-square, London, W.C.1 (from whom a memorandum giving the general conditions of appointment should be obtained), not later than 31st March, 1956. An additional copy should be sent direct by air-mail to the Registrar, University of Cape Town, Private Bag, Rondebosch, Cape Town, South Africa, by the same date.

The University reserves the right to appoint a person other than 1 of the applicants or to make no appointment.

MEDICAL RESEARCH COUNCIL OF NEW ZEALAND. Applications are invited for the position of RESEARCH OFFICER to the Obstetrical Research Committee of the Medical Research Council of New Zealand. Salary £1371 7s.–£1671 7s. p.a.

Further information may be obtained from the Secretary, Association of Universities of the British Commonwealth, 36, Gordon-square, London, W.C.1, or from the Registrar, University of Otago, P.O. Box 56, Dunedin, New Zealand, with whom applications close on 1st April, 1956.

Hospital Services : Senior Appointments

CHELMSFORD, ESSEX. BROOMFIELD HOSPITAL. Required, experienced Locum Tenens SENIOR HOSPITAL MEDICAL OFFICER (part resident). Unit has 330 Beds for the treatment of pulmonary tuberculosis in adults, tuberculous and non-tuberculous thoracic surgery, chest clinics and mass radiography.

Apply Physician-Superintendent.

GUY'S HOSPITAL, S.E.1. The Board of Governors invites applications for the appointment of DIRECTOR of the Department of Venereal Diseases. The appointment is of Consultant status in the National Health Service, and attendance will be required on 3 sessions a week. Applicants are required to hold higher qualifications.

Applications (1 copy), together with the names of 3 referees, should be submitted to reach the Superintendent, Guy's Hospital, London, S.E.1, not later than 17th February. In accordance with Statutory Instrument No. 1259 of the National Health Service Regulations, canvassing members of the Board or Advisory Appointments Committee will lead to disqualification.

NORTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD.

Full or maximum Part-time CONSULTANT RADIOLOGIST to Chelmsford Group of hospitals. Hospitals can be visited by arrangement with Group Radiologist, Chelmsford and Essex Hospital, Chelmsford. Residence in area is a condition of appointment.

Part-time CONSULTANT RADIOLOGIST to Haymeads Hospital, Bishop's Stortford (2 sessions a week), and to County Hospital, Hertford (1 session a week).

Full-time CONSULTANT PATHOLOGIST with special experience in bacteriology and biochemistry required for Tottenham Group of hospitals, duties mainly at St. Ann's General Hospital, N.15.

Applications (6 copies), and names of 3 referees, should reach the Secretary, 11A, Portland-place, London, W.1, by Saturday, 25th February.

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD.

(1) CONSULTANT RADIOTHERAPIST (whole-time or maximum sessions), Mount Vernon Hospital, Northwood, Middlesex (551 Beds). Duties will include consultative clinics in other regional hospitals.

Applications before 6th March, 1956.

(2) CONSULTANT SURGEON (4 half-days a week), Willesden General Hospital, Harlesden-road, N.W.10 (127 Beds). Attendances on Monday and Friday afternoons and Thursday and Friday mornings.

Applications before 10th March, 1956.

Hospitals may be visited by direct appointment.

Application forms obtainable from, and returnable to, Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1.

SOUTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for appointment as CONSULTANT ANÆSTHETIST to the Woolwich, Preston Hall and Lewisham Groups of hospitals. A total of 8 notional half-days a week is required, for Thoracic Surgical sessions, as follows :—

The Regional Thoracic Surgical Unit, The Brook Hospital, Shooters Hill, S.E.18 (3 notional half-days).

Preston Hall Hospital, British Legion Village, Maidstone (3 notional half-days (1 whole-day)).

Grove Park Hospital, Marvel's-lane, Lee, S.E.12 (1 notional half-day).

Occasional sessions elsewhere in the Region and for emergency calls (1 notional half-day).

Appointments on a sessional basis will be made.

Candidates must have had wide experience in Anæsthetics and hold the qualification of F.F.A.R.C.S. Applicants may visit the hospitals concerned.

Apply, stating nationality, age, sex, qualifications, experience, and number of notional half-days for which available, including details of present appointment and of war service, together with the names and addresses of 3 referees, to the Secretary, Advisory Appointments Committee, South East Metropolitan Regional Hospital Board, 11, Portland-place, W.1, not later than 25th February, 1956.

BIRMINGHAM REGIONAL HOSPITAL BOARD. Whole-time Locum Tenens CONSULTANT RADIOLOGIST. Duties in Hereford (2 weeks) and Stafford (4 weeks) areas.

Apply Secretary, giving details of experience, naming 3 referees, 10, Augustus-road, Birmingham, 15, immediately.

LEEDS REGIONAL HOSPITAL BOARD. Whole-time CONSULTANT PSYCHIATRIST AND DEPUTY PHYSICIAN SUPERINTENDENT (non-resident) for duties at De la Pole Hospital, Willerby, near Hull (1000 Beds—including Neurosis Unit for female patients). The successful candidate will have extramural duties at general hospitals in the Hull area and will be required to reside within 5 miles of the Hospital. Candidates should hold high qualifications in medicine and psychiatry and preferably have had experience of administrative aspects of the specialty.

Applications (12 copies), stating age, qualifications, and details of appointments held showing dates, with names and addresses of 3 referees, to the Secretary, Park-parade, Harrogate, by 28th February, 1956.

SCOTLAND. WESTERN REGIONAL HOSPITAL BOARD. Applications are invited for the following appointments :—

CONSULTANT ANÆSTHETIST to the Vale of Leven Hospital, Alexandria, Dunbartonshire. The appointment will be whole-time or on the maximum part-time basis of 9 notional half-days per week.

Whole-time ASSISTANT BACTERIOLOGIST based at Stobhill Hospital, with duties at Robroyston Hospital, Glasgow. Salary (at age 32 and over) on the scale £1500–£50–£1950.

These appointments are subject to the National Health Service (Scotland) superannuation regulations.

Applications (16 copies), stating date of birth, qualifications, experience, present appointment and the names of 3 referees, to reach the Secretary, Western Regional Hospital Board, 64, West Regent-street, Glasgow, not later than 30 days after the publication of this advertisement.

SCOTLAND. EASTERN REGIONAL HOSPITAL BOARD. Radiology—Perth Area. Applications are invited for an appointment as ASSISTANT RADIOLOGIST in the Perth Area in which the main hospitals are Perth Royal Infirmary (272 Beds) and Bridge of Earn (General) Hospital (806 Beds). Salary £1500 (at age 32)–£50–£1950. Other conditions of service in accordance with national agreement.

Further particulars and forms of application from the Secretary to the Board, 430, Blackness-road, Dundee, with whom applications must be lodged not later than 4th March, 1956.

MANCHESTER REGIONAL HOSPITAL BOARD. Whole-time NON-RESIDENT ASSISTANT PATHOLOGIST (Senior Hospital Medical Officer) to the Lancaster and Kendal Hospital Centre (laboratories at the Royal Lancaster Infirmary, Lancaster, and the Westmorland County Hospital, Kendal). General experience essential but special experience in bacteriology desirable. Appointee will work under general guidance of a Consultant.

Application forms from the Senior Administrative Medical Officer to the Board, Cheetwood-road, Manchester, 8, to be returned by 20th February, 1956.

MANCHESTER. UNITED MANCHESTER HOSPITALS. MANCHESTER ROYAL EYE HOSPITAL. Applications are invited for the post of Full-time SENIOR HOSPITAL MEDICAL OFFICER (non-resident). Previous experience in ophthalmology essential. The terms and conditions of service for hospital medical and dental staffs will apply.

Applications to be made on forms obtainable from the undersigned as soon as possible.

F. J. CABLE, Secretary to the Board of Governors.

NEWCASTLE REGIONAL HOSPITAL BOARD. TEESSIDE AND CLEVELAND HOSPITAL MANAGEMENT COMMITTEE AREAS. CONSULTANT DERMATOLOGIST (whole-time or part-time, for a minimum of 9 notional half-days per week). Further particulars from the Deputy Senior Administrative Medical Officer.

Applications, with names and addresses of 3 referees, to Deputy Senior Administrative Medical Officer, Newcastle Regional Hospital Board, Benfield-road, Newcastle upon Tyne, 6, within 28 days.

SHEFFIELD REGIONAL HOSPITAL BOARD. Maximum Part-time CONSULTANT ANÆSTHETIST required with duties in Grimsby and Louth.

Application forms and further details from Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, 10. Forms to be returned by 3rd March, 1956.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time ASSISTANT ANÆSTHETIST required for hospitals in Grimsby and Louth. Salary scale £1500–£50–£1950.

Application forms and further details from Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, 10. Forms to be returned by 10th March, 1956.

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD requires Part-time CONSULTANT OPHTHALMOLOGIST (1 half-day per week) for the Redhill (Surrey) Group of hospitals. Duties mainly at Horsham Hospital. Outpatient clinics held Monday morning, or Thursday morning or afternoon.

Applications (5 copies), giving date of birth, qualifications, experience, and names of 3 referees, to Secretary (S.1), South West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 3rd March, 1956. Applicants may visit Hospital by local arrangement.

TASMANIA. ROYAL HOBART HOSPITAL, Hobart. Applications addressed to the Agent General for Tasmania, 457, Strand, London, W.C.2, and closing on 1st March, 1956, are invited from medical practitioners registrable in Tasmania for appointment to the position of ASSISTANT to the Director of Orthopædic Services.

Conditions: The position is a full-time appointment to the Royal Hobart Hospital and the successful applicant will be subject to the professional control of the Director of Orthopædic Services. Applicants should have a postgraduate qualification in surgery but not necessarily a postgraduate qualification in orthopædic surgery but should be prepared to obtain such qualification within a reasonable time of appointment. Private consultative practice will be permitted provided such does not conflict with the duties of the appointment.

Salary: £2300–£100–£2500. If in possession of an orthopædic postgraduate qualification, or on its being attained, £2500 p.a. will become payable immediately.

Annual recreation leave of 28 days. Superannuation benefits available. Assisted passages can be arranged through the Immigration Department, or alternatively, forward fares only will be refunded on a pro rata basis over a period of 5 years service with the Hospital.

Further particulars available from the Agent General for Tasmania.

TASMANIA. ROYAL HOBART HOSPITAL, Hobart. Applications addressed to the Agent General for Tasmania, 457, Strand, London, W.C.2, and closing on 1st March, 1956, are invited from medical practitioners registrable in Tasmania for appointment to the position of SPECIALIST in Anæsthesia.

Conditions: The position is a full-time appointment to the Royal Hobart Hospital. Applicants should have a postgraduate qualification in Anæsthesia. Private consultative practice will be permitted provided such does not conflict with the duties of the appointment.

Salary: £2500 p.a. (Australian currency).

Annual recreation leave of 28 days. Superannuation benefits available. Assisted passages can be arranged through the Immigration Department, or alternatively, forward fares only will be refunded on a pro rata basis over a period of 5 years service with the Hospital.

Further particulars available from the Agent General for Tasmania.

ST. ALBANS (near). SHENLEY HOSPITAL. (2350 Beds.) Locum ASSISTANT PSYCHIATRIST (whole-time), Senior Hospital Medical Officer grade.

Applications to Medical Superintendent.

NEW ZEALAND. THE OTAGO HOSPITAL BOARD. MEDICAL UNIT, DUNEDIN HOSPITAL AND UNIVERSITY OF OTAGO. SENIOR ASSISTANT on the Clinical and Teaching Staff. Applications are invited for the position of Senior Assistant on the Medical Unit, Dunedin Hospital and University of Otago from persons holding a degree in Medicine of an approved University and who either:—

(*a*) hold a higher qualification and have had 2 or more years practical experience in medicine; or

(*b*) have been qualified for 6 years or more and have had 3 years or more practical experience in medicine.

The Senior Assistant ranks as Lecturer or Senior Lecturer in Medicine and as a Junior Specialist and the salary payable is that under the Hospital Employment (Medical Officers') Regulations, viz.: £1290–£1590 by annual increments of £50 plus General Wage Increase of £81 7s. p.a. The commencing rate of salary within the scale will be that determined by the Medical Officers' Salaries Grading committee in accordance with the qualifications and experience of the appointee.

Applicants should have a good background in medicine and have had some teaching experience. The position is non-resident, is full-time and private practice is not permitted.

Conditions of appointment and application forms may be obtained from the Office of the High Commissioner for New Zealand, 415, Strand, London, or from THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2. Travelling expenses will be paid in accordance with the table set out in the Conditions of Appointment.

Applications, stating age, qualifications and experience together with Health and Radiological Certificates and testimonials will be received by the undersigned up to 10 A.M. on Monday, 2nd April, 1956.

W. A. WILLIAMSON, Secretary, Otago Hospital Board.

P.O. Box 946, Dunedin, New Zealand.

Hospital Services: Junior Appointments

CENTRAL MIDDLESEX HOSPITAL, Park Royal, N.W.10. SENIOR HOUSE OFFICER required in Pathology Department. Good facilities for training in all branches of pathological work. Hospital may be visited by appointment with the Pathologist. Post vacant 2nd April, 1956.

Applications, with names of 2 referees, to Medical Director by 18th February, 1956.

GERMAN HOSPITAL, London, E.8. (General—157 Beds.) Applications are invited for the 6-months resident appointment (now vacant) of Pre-registration HOUSE SURGEON and should be sent immediately to Group Secretary, Hackney Hospital, London, E.9, quoting GH/PHS.

HACKNEY HOSPITAL, London, E.9. (General—841 Beds.) Applications for the 6-months appointment from 3rd March of Pre-registration RESIDENT OBSTETRIC HOUSE SURGEON (second post) should be sent by 18th February to Secretary, above address, quoting HH/PHS. Post recognised for M.R.C.O.G.

HACKNEY HOSPITAL, London, E.9. (General—841 Beds.) Applications for the 6-months appointment from 3rd March of Pre-registration RESIDENT HOUSE PHYSICIAN should be sent by 18th February to Secretary, above address, quoting HH/PHP.

HACKNEY HOSPITAL, London, E.9. (General—841 Beds.) Applications from registered practitioners for the 6 months resident appointment of CASUALTY OFFICER AND E.N.T. HOUSE SURGEON (House Officer grade), should be sent immediately to Secretary, above address, quoting HH/CHO.

HAMMERSMITH HOSPITAL AND INSTITUTES OF OBSTETRICS AND CHILD HEALTH, Ducane-road, London, W.12. RESIDENT PÆDIATRIC REGISTRAR required mid-April. Duties involve care of newborn babies in Maternity Department and Premature Baby Unit.

Applications, stating age, qualifications, experience, names of 2 referees, to Secretary, Board of Governors, by 25th February.

HAMPSTEAD GENERAL HOSPITAL, Haverstock Hill, N.W.3. (ROYAL FREE HOSPITAL GROUP.) Applications are invited for the following pre-registration posts:—

HOUSE PHYSICIAN.
HOUSE SURGEON.

Both vacant 1st April, 1956, and tenable for a period of 6 months.

Application forms may be obtained from the Secretary, to whom they should be returned, together with copies of 3 recent testimonials, by 24th February, 1956.

HAMPSTEAD GENERAL HOSPITAL, Haverstock Hill, N.W.3. (ROYAL FREE HOSPITAL GROUP.) Applications are invited from registered medical practitioners for the post of RESIDENT CASUALTY OFFICER (graded as Senior House Officer). Salary £745 p.a. Vacant 1st April, 1956, tenable for a period of 6 months at the main Outpatients Department, Bayham-street, N.W.1.

Application forms may be obtained from the Secretary, to whom they should be returned, together with copies of 3 recent testimonials, by 24th February, 1956.

LONDON CHEST HOSPITAL. Hospitals for Diseases of THE CHEST. 2 vacancies occur 1st April, 1956, for RESIDENT HOUSE PHYSICIAN. Appointments for 6 months, 4 in London, 2 at the Country Branch, near Letchworth, and posts graded as House Officer. Duties include work in the Outpatient Department and Refill Clinic as well as in wards.

Applications, stating date of birth, qualifications with dates, and previous appointments held, with copies of 3 testimonials, should reach the undersigned not later than 21st February.

THOMAS BROWN, House Governor.

London Chest Hospital, E.2.

HOSPITAL OF ST. JOHN AND ST. ELIZABETH, 60, Grove End-road, London, N.W.8. Applications are invited from pre-registration or registered medical practitioners (Male) for the appointment of HOUSE SURGEON, to become vacant on Thursday, 5th April, 1956. This post is recognised for purposes of the F.R.C.S. (Eng.). Appointment will be for a period of 6 months. National Health Service salary.

Applications should reach the Secretary on or before Saturday, 25th February, together with copies of 3 recent testimonials.

MARLBOROUGH DAY HOSPITAL, 38, Marlborough-place, N.W.8. NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. PSYCHIATRIC REGISTRAR, 3 sessions a week, including some evening sessions at the above Hospital, to commence as soon as possible. Successful applicant required to undergo personal analysis which will be given free of charge. Clinic may be visited by direct appointment.

Application forms obtainable from, and returnable to, Group Secretary, Central Middlesex Group Hospital Management Committee, Acton-lane, N.W.10, by 21st February, 1956.

MARLBOROUGH DAY HOSPITAL, 38, Marlborough-place, N.W.8. SENIOR HOUSE OFFICER, 6 sessions a week, including some evening sessions, to commence as soon as possible. Clinic may be visited by direct appointment.

Applications to Medical Director by 21st February, 1956.

MEMORIAL HOSPITAL, Shooters Hill, Woolwich, S.E.18. SENIOR HOUSE OFFICER (Casualty Department), vacant 17th March. Recognised for F.R.C.S. 6 months resident appointment and may then be renewed. Salary £745 p.a., less £150 p.a. for residence.

Apply to Secretary.

MILE END HOSPITAL, Bancroft-road, London, E.1. (475 Beds.) HOUSE SURGEON (pre- or post-registration). Post vacant 8th March, 1956. Post recognised by Royal College of Surgeons.

Application forms obtainable from Physician-Superintendent, to be returned by 17th February, 1956, with copies of not more than 3 testimonials.

NATIONAL HEART HOSPITAL, Maids Moreton, BUCKINGHAM. (Country Branch of the National Heart Hospital.) Applications are invited for the post of RESIDENT MEDICAL OFFICER at the Hospital's Country Branch. The appointment is for a period of 6 months from 1st April, 1956, but may be renewed for a further period not exceeding 6 months. The status of the post is that of a Senior House Officer and the salary is in accordance with the terms and conditions of service of hospital medical staff. The holder will be expected to attend on 1 day weekly at the Hospital in Westmoreland-street.

Applications, with copies of 3 recent testimonials, should be sent to me at Westmoreland-street, London, W.1, not later than 25th February, 1956.

ROBERT G. E. WHITNEY, Secretary to the Board.

NORTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD.

MEDICAL REGISTRAR (non-resident), Whipps Cross Hospital, Leytonstone, E.11.

MEDICAL REGISTRAR (resident or non-resident—sleeping in on duty nights), Mile End Hospital, Bancroft-road, E.1.

REGISTRAR in Obstetrics and Gynæcology (resident or non-resident—s/e flat available for single person), Essex County Hospital, Colchester, Essex.

REGISTRAR in Obstetrics and Gynæcology (resident), Mile End Hospital, Bancroft-road, E.1.

SURGICAL REGISTRAR (resident or non-resident—sleeping in on duty nights), Hackney Hospital, Homerton High-street, E.9. Recognised for F.R.C.S.

REGISTRAR in Pathology (non-resident), North Middlesex Hospital and Annexes, Silver-street, Edmonton, N.18. Recognised for D.Path. 1 years previous experience essential, good opportunity afforded for experience in all branches.

ANÆSTHETIC REGISTRAR (resident), Chelmsford and Essex and St. John's Hospitals, Chelmsford, Essex. Recognised for D.A., and F.F.A.R.C.S. Duties include attendance at both Hospitals and at Broomfield Hospital for thoracic surgery.

Appointments subject to review after 1 year.

Application forms from Secretary, 11A, Portland-place, W.1, to be returned by 25th February, 1956.

POPLAR HOSPITAL, East India Dock-road, E.14. (120 Beds.) Required, HOUSE SURGEON (pre-registration post). Duties include inpatient, outpatient and casualty work. Recognised for F.R.C.S. Vacant 7th March, 1956.

Applications, stating age, nationality and qualifications, to the Hospital Secretary.

PRINCE OF WALES'S GENERAL HOSPITAL, N.15. (248 Beds.) Applications are invited from registered medical practitioners for the post of RESIDENT HOUSE SURGEON (Senior House Officer) to Orthopædic, Casualty and E.N.T. Departments, for a period of 6 months, vacant 20th March.

Application form from Secretary, Tottenham Group Hospital Management Committee, The Green, N.15, to be returned by 2nd March.

QUEEN MARY'S HOSPITAL FOR THE EAST END, Stratford, London, E.15. PÆDIATRIC HOUSE PHYSICIAN (Male or Female), House Officer third post. Duties will include some work in related departments (e.g., Diabetic Clinic, &c.). 6 months appointment commencing 17th March, 1956. Post recognised for D.C.H.

Applications, with copies of recent testimonials, to Group Secretary, West Ham Group Hospital Management Committee, Stratford, E.15, by 25th February, 1956.

QUEEN MARY'S HOSPITAL FOR THE EAST END, Stratford, London, E.15. HOUSE SURGEON (Male or Female), House Officer third post. 6 months commencing 16th March, 1956. Post recognised for F.R.C.S.

Applications, with copies of recent testimonials, to Group Secretary, West Ham Group Hospital Management Committee, Stratford, E.15, by 25th February, 1956.

QUEEN MARY'S HOSPITAL FOR THE EAST END, Stratford, London, E.15. OBSTETRIC HOUSE SURGEON (Male or Female), House Officer third post. 6 months commencing 1st April, 1956. Successful candidate may be eligible for appointment as Senior Obstetric House Surgeon (Senior House Officer grade) for the following 6 months. Post recognised for M.R.C.O.G.

Applications, with copies of recent testimonials, to Group Secretary, West Ham Group Hospital Management Committee, Stratford, E.15, by 25th February, 1956.

QUEEN MARY'S HOSPITAL FOR THE EAST END, Stratford, London, E.15. SENIOR OBSTETRIC HOUSE SURGEON (Male or Female), Senior House Officer grade. 6 months commencing 1st April, 1956. Post recognised for M.R.C.O.G.

Applications, with copies of recent testimonials, to Group Secretary, West Ham Group Hospital Management Committee, Stratford, E.15, by 25th February, 1956.

QUEEN ELIZABETH HOSPITAL FOR CHILDREN MANAGEMENT COMMITTEE, Hackney-road, E.2, Shadwell, E.1, and BANSTEAD WOOD, SURREY. HOUSE OFFICER. Appointment will be made for 2 consecutive periods of 6 months commencing at Hackney-road 1st April, 1956. First period as House Physician and second as House Surgeon and Casualty Officer.

Application forms may be obtained from the Secretary at Hackney-road, and should be returned with copies of not more than 3 testimonials on or before 20th February, 1956.

QUEEN ELIZABETH HOSPITAL FOR CHILDREN MANAGEMENT COMMITTEE, Hackney-road, E.2, Shadwell, E.1, and BANSTEAD WOOD, SURREY. RESIDENT MEDICAL OFFICERS (2) (Male or Female), graded Senior House Officer required, 1 at Hackney-road and 1 at Banstead Wood. Applications are invited for the above appointments to become vacant 1st April, 1956. Candidates must have had experience in the treatment of sick children. The appointments will be for 1 year in each case.

Application forms may be obtained from the Secretary at Hackney-road and should be returned with copies of not more than 3 testimonials not later than 20th February, 1956.

ROYAL MASONIC HOSPITAL, Ravenscourt Park, London, W.6. Applications are invited for the appointment of SENIOR REGISTRAR (non-resident) to the Department of Pathology. Candidates should have had a minimum of 3 years training in general pathology. The post offers opportunities for experience in clinical pathology and morbid histology.

Applications, giving detailed information and the names and addresses of 3 referees, should reach the undersigned (from whom further information may be obtained) on or before 10th March, 1956.

R. E. LAWSON, Secretary and House Governor.

ROYAL NATIONAL THROAT, NOSE AND EAR HOSPITAL, Gray's Inn-road, W.C.1, and Golden-square, W.1, with which is associated the Institute of Laryngology and Otology (University of London). General Practitioner CLINICAL ASSISTANTS and OUTPATIENT ASSISTANTS. These appointments give those engaged in general practice who are able to attend for 2 sessions weekly commencing in March, 1956, the opportunity of widening their clinical experience in the specialty. The Clinical Assistantships are honorary, but at the end of a 3 months trainee period the holders will be appointed for a period of 1 year as Outpatient Assistants with remuneration under paragraph 10 (b) of the National Health Service terms and conditions of service.

Further particulars may be obtained from the House Governor.

ST. GEORGE-IN-THE-EAST HOSPITAL, Raine-street, Wapping, E.1. Applications are invited for the post of HOUSE SURGEON (pre- or post-registration). Post vacant immediately. Tenable for 6 months. Salary, &c., in accordance with national scale.

Applications, stating age, nationality, qualifications and experience, with copies of 3 recent testimonials, to be forwarded to the Medical Superintendent.

ST. GEORGE-IN-THE-EAST HOSPITAL, Raine-street, Wapping, E.1. Applications are invited for the post of HOUSE PHYSICIAN (pre- or post-registration). Post vacant 4th March, 1956. Tenable for 6 months. Salary, &c., in accordance with the national scale.

Applications, stating age, nationality, qualifications and experience, together with copies of 3 recent testimonials, to be forwarded to the Medical Superintendent.

ST. MARY'S HOSPITAL, W.2. Applications are invited, from suitably qualified Male candidates for the post of Whole-time SENIOR REGISTRAR in the Venereal Diseases Department. The appointment is for a first period of 12 months as from 8th May, 1956, the holder being eligible for re-election.

Applications, stating nationality, date of birth, qualifications, details of experience, together with dates and National Health Service gradings of previous and present appointments and names and addresses of 3 referees, should reach ALAN POWDITCH, House Governor, not later than 29th February, 1956.

ST. PETER'S, ST. PAUL'S AND ST. PHILIP'S HOSPITALS. RESIDENT SURGICAL OFFICER (Registrar grade) required for St. Philip's Hospital on 1st April, or earlier by arrangement. Appointment for 6 months with opportunity for extension.

Apply in writing (12 copies), and names of 2 referees, to the House Governor, St. Peter's Hospital, Henrietta-street, W.C.2. Closing date 25th February, 1956.

ST. STEPHEN'S HOSPITAL, Chelsea, S.W.10. South WEST METROPOLITAN REGIONAL HOSPITAL BOARD. REGISTRAR in Anæsthetics (whole-time), non-resident.

Forms of application should be obtained from, and returned (within 14 days) to, the Group Secretary, St. Luke's Hospital, Sydney-street, London, S.W.3 (enclose stamped addressed envelope).

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There will be vacancies for the following Senior House Officers on 15th May, 1956 :—

1 HOUSE PHYSICIAN.

1 HOUSE SURGEON to the Orthopædic and Plastic Departments.

Further particulars and form of application, which must be returned not later than 12th March, 1956, are obtainable from the undersigned.

H. F. RUTHERFORD, House Governor and Secretary.

WANSTEAD HOSPITAL, Hermon Hill, E.11. (191 Beds.) Applications are invited for the post of CASUALTY OFFICER (recognised for F.R.C.S.), graded Senior House Officer. Salary £745 p.a., less £150 p.a. for board, lodging, &c.

Applications, with full details and copies of 2 recent testimonials, should be sent immediately to Secretary, Hospital Management Committee, Forest Group, Langthorne-road, E.11.

WANSTEAD HOSPITAL, Hermon Hill, London, E.11. (191 Beds.) HOUSE SURGEON required. Post vacant 12th March, 1956. Recognised for F.R.C.S.

Applications, with full details and copies of 2 recent testimonials, should be sent immediately to the Secretary, Hospital Management Committee, Forest Group, Langthorne-road, E.11.

WHIPPS CROSS HOSPITAL, London, E.11. Applications are invited from fully registered medical practitioners for the post of HOUSE PHYSICIAN (post-registration) in the Pædiatric Department. Post recognised for the D.C.H. Vacant mid-March.

Application forms from the Hospital Secretary to be returned by 20th February, 1956.

WHIPPS CROSS HOSPITAL, London, E.11. Applications are invited for the post of HOUSE PHYSICIAN (pre-registration). Post vacant mid-March.

Application forms from the Hospital Secretary to be returned by 20th February, 1956.

WHITTINGTON HOSPITAL, N.19. Registrar (whole-time) required for Obstetrical and Gynæcological Department (85 obstetrical and 48 gynæcological beds), vacant 9th May, 1956. Post recognised for M.R.C.O.G., in Obstetrics and Gynæcology (combined appointment). Hospital may be visited by direct appointment.

Application forms obtainable from, and returnable to, Secretary, Archway Group Hospital Management Committee, 46, Cholmeley-park, N.6, within 10 days.

WHITTINGTON HOSPITAL, London, N.19. Whole-time REGISTRAR required in the Physical Medicine Department, vacant 1st May, 1956. This post affords wide general experience in all branches of physical medicine and is recognised for Part II of the D.Phys.Med. Hospital may be visited by appointment with the Medical Superintendent.

Application forms obtainable from, and returnable to, Group Secretary, Archway Group Hospital Management Committee, 46, Cholmeley-park, N.6, within 10 days.

ASHFORD HOSPITAL, Ashford, Middlesex. (560 Beds.) STAINES GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, RESIDENT HOUSE OFFICER (Male) for Special Departments (E.N.T., Pædiatric, Dermatology, &c.). 6 months appointment, vacant 26th March, 1956. Not suitable for pre-registration candidates ; offers good experience before general practice.

Applications, stating age, qualifications and experience, with copies of up to 3 recent testimonials, to Medical Director of Hospital.

ASHFORD HOSPITAL, Ashford, Middlesex. (560 Beds.) STAINES GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, RESIDENT HOUSE OFFICER (Male) for general medical and surgical duties. 6 months appointment, not suitable for pre-registration candidates.

Applications, stating age, qualifications, and experience, with copies of up to 3 recent testimonials, to Medical Director of Hospital.

ASHFORD HOSPITAL, Ashford, Middlesex. Staines GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, RESIDENT SENIOR HOUSE OFFICER (Male) for wards dealing with tuberculosis and diseases of the chest (56 Beds) and some outpatient work. Post vacant 14th March, 1956.

Applications, stating age, qualifications and experience, with copies of up to 3 recent testimonials, to Medical Director of Hospital.

AYLESBURY, BUCKINGHAMSHIRE. STOKE MANDEVILLE HOSPITAL. (609 Beds.) HOUSE PHYSICIAN for the Pædiatric Department. The post qualifies for D.C.H. Duties will include care of children in Infectious Diseases Unit, Plastic Unit, and Outpatients Department, Royal Buckinghamshire Hospital. Recognised pre-registration post ; applications from registered practitioners will be considered. Post vacant 11th March, 1956. Interview 16th February, 1956.

Apply, with copies of 2 testimonials, to the Administrative Officer.

AMENDED ADVERTISEMENT

AYLESBURY, BUCKINGHAMSHIRE. ROYAL BUCKINGHAMSHIRE HOSPITAL. CASUALTY OFFICER (Senior House Officer) required mid-March. Recently furnished flat available at low rental.

Apply, with copies of 2 testimonials, to Secretary-Superintendent.

ALTON, HAMPSHIRE. HENRY GAUVAIN HOSPITAL. (114 Beds.) LORD MAYOR TRELOAR GROUP HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER required for the Henry Gauvain Hospital (formerly Morland Clinics) for period of 1 year from the beginning of March, 1956. Non-pulmonary tuberculosis, orthopædic and general surgery. Married accommodation available in small cottage on estate. Primary or Final F.R.C.S. candidate preferred.

Apply as soon as possible to Surgeon-Superintendent, Henry Gauvain Hospital, Alton, Hants.

ABERDEEN GENERAL HOSPITALS BOARD OF MANAGEMENT. Applications are invited for the following House Officer appointments for a period of 6 months from 1st February to 31st July, 1956. The appointments are approved as Pre-registration Service posts, and tenure for the subscribed period will count towards full registration on the Medical Register for Provisionally Registered Practitioners.

Aberdeen Royal Infirmary

HOUSE SURGEON (casualty) in the Outpatient Department. Non-resident.

HOUSE PHYSICIAN in the Outpatient (Skin and V.D.) Department. Non-resident.

HOUSE SURGEON for ophthalmic ward. Resident.

Woodend General Hospital

2 HOUSE SURGEONS for general surgical wards. Resident. Salary and conditions of service in accordance with the terms issued by the Department of Health for Scotland.

Applications, with full details, and giving the names of 2 referees, should be lodged immediately with the Secretary, Aberdeen General Hospitals, P.O. Box 92, 62, Queen's-road, Aberdeen.

ABERDEEN GENERAL HOSPITALS BOARD OF MANAGEMENT. Applications are invited for the post of SENIOR HOUSE OFFICER in Orthopædics at the Aberdeen Royal Infirmary. The post is non-resident and applicants should have previous experience in general surgery.

Applications, giving details of qualifications and experience, with the names of 2 referees, should be lodged with the Secretary, Aberdeen General Hospitals, P.O. Box 92, 62, Queen's-road, Aberdeen, within 14 days of the appearance of this advertisement.

BARROW-IN-FURNESS. NORTH LONSDALE HOSPITAL. Applications are invited for a resident post of HOUSE SURGEON (recognised for pre-registration) at the above Hospital, with surgical work under control of Consultant Surgeons. Post recognised for F.R.C.S. National conditions and salary scale.

Applications to the Group Secretary, Barrow and Furness Hospital Management Committee, 52, Paradise-street, Barrow-in-Furness.

BARROW AND FURNESS HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for a resident post of SENIOR HOUSE OFFICER in the Obstetric and Gynecology Department based at the Risedale Maternity Hospital, Barrow-in-Furness. Approved for D.Obst.R.C.O.G. Post available approximately 1st April.

Applications to the Group Secretary, 52, Paradise-street, Barrow-in-Furness.

BEXHILL HOSPITAL, Bexhill-on-Sea. (62 Beds.) House SURGEON required. Pre-registration post, vacant now. National scale of salary.

Apply to Hospital Administrator.

BIRMINGHAM, 9. LITTLE BROMWICH GENERAL HOSPITAL. HOUSE SURGEON (Male/Female) vacant at present. Recognised as pre-registration appointment.

Apply Physician-Superintendent with copies of 2 testimonials or names of referees.

BIRMINGHAM, 9. LITTLE BROMWICH GENERAL HOSPITAL. PÆDIATRIC HOUSE PHYSICIAN (Male/Female), vacant 1st April, 1956. Recognised for D.C.H., includes duties in infectious diseases wards and at Neonatal Department and clinics.

Apply Physician-Superintendent.

BIRMINGHAM REGIONAL HOSPITAL BOARD.

(1) **Dudley and Stourbridge Group, Guest Hospital, Dudley**

REGISTRAR (general medicine). Duties at Wordsley Hospital (478 Beds). Experience specialty essential ; higher qualification desirable. Resident.

(2) **Walsall Group, Wednesbury-road, Walsall**

REGISTRAR (general surgery), for Manor Hospital (333 Beds). Experience specialty essential. Married quarters available.

(3) **Wolverhampton Group, Royal Hospital, Wolverhampton**

REGISTRAR (diagnostic radiology). Part I Diploma of Medical Radiology essential. Hospital recognised for Part II. Duties also at other hospitals in Group.

Application forms from Group Secretaries, to be returned before 20th February, 1956.

BIRMINGHAM, 29. SELLY OAK HOSPITAL. (Equipped beds 959.) HOUSE SURGEON. Recognised for F.R.C.S. and Pre-registration Service. Appointment tenable for 6 months.

Apply immediately to Medical Superintendent, giving qualifications, age and enclosing copies of 3 testimonials.

BLACKPOOL AND FYLDE HOSPITAL MANAGEMENT COMMITTEE. ANÆSTHETIST (Junior Hospital Medical Officer grade). The post which is recognised for the D.A. involves undertaking duties at hospitals within the Group but the main duties are at the Victoria Hospital, Blackpool. New establishment includes 2 Senior House Officer posts. Residence in Hospital optional. Tenure limited to period of 4 years but holder eligible for reappointment.

Applications, giving details of age, qualifications and experience, together with the names and addresses of 3 referees, should be addressed to the Group Secretary.

BLACKPOOL. VICTORIA HOSPITAL. Blackpool and FYLDE HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER (ophthalmics). Applications are invited for this post (available from 1st April) which is recognised for the D.O., D.O.M.S. and F.R.C.S. under para. 23 (b) Ophthalmology. Modern well-equipped hospital serving the whole of the Blackpool and Fylde area. Non-resident post but single accommodation available at Hospital if desired.

Applications, stating age, qualifications and experience and giving the names and addresses of 3 referees, should be addressed to the Group Secretary.

BOLTON DISTRICT GENERAL HOSPITAL. (604 Beds.) RESIDENT HOUSE PHYSICIAN for the Department of Pædiatrics. Not available to pre-registration candidates. Tenable for 6 months. Hospital recognised for D.C.H.

Applications, stating age, nationality, qualifications, experience, and the names of 2 referees, to Group Secretary, Bolton and District Hospital Management Committee, The Royal Infirmary, Bolton.

BOLTON AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. THE ROYAL INFIRMARY, BOLTON (237 Beds), BOLTON DISTRICT GENERAL HOSPITAL (604 Beds). RESIDENT HOUSE SURGEONS (2) for general surgical duties, 1 for each of above hospitals. Vacant mid-February, tenable for 6 months and recognised under Pre-registration Service Scheme. Also recognised for F.R.C.S.

Applications, stating age, nationality, qualifications, experience, and the names of 2 referees, to Group Secretary, The Royal Infirmary, Bolton.

BOLTON AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. GROUP LABORATORIES. RESIDENT PATHOLOGIST (Senior House Officer grade), vacant 1st March, tenable for 12 months and recognised for the Dip. Path.

Applications, stating age, nationality, qualifications, experience, and the names of 2 referees, to Group Secretary, The Royal Infirmary, Bolton.

BOURNEMOUTH. ROYAL VICTORIA HOSPITAL, Shelley-road, BOSCOMBE. (494 Beds.) BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment vacant immediately of SENIOR HOUSE OFFICER (resident), orthopædics and casualty combined. The post is recognised for the F.R.C.S. examination and is normally tenable for 12 months.

Applications to the Hospital Secretary at the Hospital.

BRENTWOOD, ESSEX. NORTH EAST METROPOLITAN REGIONAL BLOOD TRANSFUSION CENTRE. JUNIOR HOSPITAL MEDICAL OFFICER required for full-time duties with mobile teams at donor sessions. Opportunity exists for training in blood-transfusion serology.

Applications, giving age, qualifications, experience, and names of 2 referees, to the Director as soon as possible.

BRISTOL. SOUTHMEAD GENERAL HOSPITAL GROUP MANAGEMENT COMMITTEE. Required at Southmead Hospital (571 Beds, including 133 maternity) RESIDENT SENIOR HOUSE OFFICER (urological surgery) for 12 months commencing immediately. Post recognised for F.R.C.S. examination.

Applications, to be submitted to the Group Secretary, Southmead Hospital, Bristol.

BUXTON. DEVONSHIRE ROYAL HOSPITAL. (252 Beds.) Applications are invited for the post of RESIDENT SENIOR HOUSE OFFICER. This Hospital is a large Special Hospital for the treatment and rehabilitation of all types of locomotor disorders. Duties are mainly medical and include work in the long-stay unit of the Manchester University Rheumatism Research Centre. The Hospital is recognised under the regulations for the Diploma in Physical Medicine, Part 2, and the post also offers good medical experience.

Applications, stating age, experience and qualifications, together with copies of 2 testimonials, to be addressed to the Secretary, Stockport and Buxton Hospital Management Committee, 59B, Shaw-heath, Stockport.

CAMBRIDGE. MATERNITY HOSPITAL. Resident OBSTETRICAL OFFICER (second or subsequent post) for 6 months from 1st April. Recognised Pre-registration Service. Recognised for M.R.C.O.G. and D.Obst.R.C.O.G. examinations.

Apply, stating age, nationality, qualifications, and experience with dates, and copies of 3 testimonials, to Secretary, United Cambridge Hospitals, Addenbrooke's Hospital, by 25th February. Interviews 6th March.

CAMBRIDGE. ADDENBROOKE'S HOSPITAL. House OFFICER (E.N.T. Department) for 6 months from 25th February. Pre-registration (surgical) or post-registration applications will be considered.

Apply, stating age, nationality, qualifications, and experience with dates, and copies of 3 testimonials, to the Secretary as soon as possible.

CAMBRIDGE. ADDENBROOKE'S HOSPITAL. REGISTRAR (radiology) required 1st May.

Apply, with full particulars and names of 3 referees, to Secretary by 25th February.

CANTERBURY. KENT AND CANTERBURY HOSPITAL. (277 Beds.) The post of GENERAL SURGICAL AND UROLOGICAL HOUSE SURGEON (pre-registration or third post), which is recognised for the F.R.C.S., becomes vacant in the middle of March, 1956. National Health Service salary and conditions.

Applications, together with copies of 2 recent testimonials, to be addressed to the Hospital Secretary at the above Hospital.

CARDIFF. ROYAL HAMADRYAD GENERAL AND SEAMEN'S HOSPITAL. CARDIFF HOSPITAL MANAGEMENT COMMITTEE. RESIDENT SENIOR HOUSE OFFICER (medical) required at above Hospital, which caters for acute general medical and surgical cases. Hospital contains acute Medical unit, General Surgical and Genito-urinary Units and outpatient facilities, also certain amount of casualty work. Consultant staff drawn mostly from United Cardiff Hospitals. Post for 1 year and presents facilities for postgraduate study.

Form of application from Group Secretary, Cardiff Hospital Management Committee, 44, Cathedral-road, Cardiff.

CARDIFF. THE UNITED CARDIFF HOSPITALS. Applications are invited for the appointment of RESIDENT MEDICAL OFFICER at the Cardiff Royal Infirmary (Senior House Officer grade).

Application forms can be obtained from the Secretary, United Cardiff Hospitals, Cardiff Royal Infirmary, Newport-road, Cardiff.

CARDIFF HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER in Obstetrics and Gynæcology required 1st April, 1956. Appointment recognised for M.R.C.O.G.

Further particulars and form of application from Group Secretary, 44, Cathedral-road, Cardiff.

CARLISLE. CUMBERLAND INFIRMARY. (240 Beds.) Applications are invited for the following appointments :—

(i) SENIOR HOUSE OFFICER (orthopædics).

(ii) SENIOR HOUSE OFFICER ("Specials"—i.e., E.N.T. and Eyes).

Applications, giving 2 names for reference purposes, should be sent to the Group Secretary, East Cumberland Hospital Management Committee, Cumberland Infirmary, Carlisle.

CARLISLE. CUMBERLAND INFIRMARY. (338 Beds.) There are vacancies for 2 HOUSE OFFICERS (general surgery). The posts are recognised for pre-registration purposes and for the F.R.C.S. examination.

Applications, stating age, giving details of education, training and experience, together with the names of 2 referees, should be sent to the Group Secretary, Cumberland Infirmary, Carlisle, as soon as possible.

CARLISLE. GARLANDS HOSPITAL. Garlands Hospital MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners (Male and Female) for the post of SENIOR HOUSE OFFICER at the above Mental Hospital. Non-resident post. Salary £745 p.a. Appointment is subject to the National Health Service superannuation regulations and to the conditions and terms of service laid down by the Minister of Health.

Applications, stating age, qualifications and experience and the names of 2 referees, should be sent to the Medical Superintendent as soon as possible.

CHELMSFORD AND ESSEX HOSPITAL. Applications are invited for the resident post of CASUALTY OFFICER (Senior House Officer). It is recognised for the F.R.C.S. and offers excellent experience in the treatment of fractures and diagnosis of acute medical and surgical emergencies. Opportunity is given for Casualty Officer to follow up his cases in the wards and to obtain operating experience in major theatre under the guidance of the Consultants or the Resident Surgical Officer. Off-duty time is generous and the post is one likely to suit both an officer seeking a higher qualification in surgery or one intending General Practice. The vacancy will occur on 17th March.

Apply Secretary, Chelmsford Hospital Management Committee, Chelmsford and Essex Hospital, Chelmsford.

CHELMSFORD AND ESSEX HOSPITAL. (162 Beds.) Applications are invited for the post of RESIDENT HOUSE SURGEON (pre-registration post). The post will become vacant on 15th March and offers good surgical experience and is recognised for the F.R.C.S.

Applications, together with 2 recent testimonials, to the Secretary, Chelmsford Hospital Management Committee, London-road, Chelmsford.

CHESTER ROYAL INFIRMARY. Applications are invited for the post of HOUSE SURGEON (general). Recognised for F.R.C.S. and Pre-registration Service.

Applications, giving full details together with the names and addresses of 2 referees, should be forwarded to the Group Secretary, XIII Chester and District Hospital Management Committee, 5, King's-buildings, Chester.

CHESTERFIELD. SCARSDALE HOSPITAL. (372 Beds. Recognised for the D.Obst.R.C.O.G. and M.R.C.O.G.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT REGISTRAR (obstetrics and gynæcology) required. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 20th February, 1956, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

COLCHESTER HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for :—

Black Notley Hospital, Braintree (528 Beds)

HOUSE OFFICER (orthopædic surgery). First, second, third or pre-registration post ; tenable for 6 months. Recognised for F.R.C.S.

Posts of HOUSE SURGEON and HOUSE PHYSICIAN. The successful applicant will serve 6 months as House Surgeon, followed by 6 months as House Physician. First, second, third or pre-registration posts. Surgical post includes duties in general surgical and gynæcological wards. Recognised for F.R.C.S. Medical post includes duties in medical and pædiatric wards.

Applications, with copies of 3 testimonials, to Group Secretary, 14, Pope's-lane, Colchester.

COVENTRY GROUP. Whole-time Senior Registrar in Obstetrics/Gynæcology. Duties at Coventry and Warwickshire (353 Beds—30 obstetric/24 gynæcology) and Gulson (312 Beds—47 obstetric/18 gynæcology) Hospitals. Higher qualification an advantage. Successful candidate may subsequently be required to spend not more than 2 years in a selected hospital of the United Birmingham Hospitals in accordance with arrangements for interchange of Senior Registrars agreed by the 2 Boards.

Application forms from Secretary, Regional Hospital Board, 10, Augustus-road, Birmingham, 15, to be returned before 27th February, 1956.

CHICHESTER. ROYAL WEST SUSSEX HOSPITAL. SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. REGISTRAR RESIDENT SURGICAL OFFICER required early March for 1 year (renewable) for duty primarily at Royal West Sussex Hospital, Chichester (202 Beds). Post recognised for F.R.C.S. 7 residents (4 surgical) of whom Resident Surgical Officer the senior. Salary £850 first year, £965 second, each less £165 for residence. Candidates may visit the Hospital.

Forms from Group Secretary, 174, Broyle-road, Chichester, to be submitted as soon as possible.

CHICHESTER. ROYAL WEST SUSSEX HOSPITAL. (202 acute beds.) RESIDENT HOUSE SURGEON required for 6 months appointment. National salary scale for first, second, or third posts. Post approved for pre-registration practitioners. Also recognised for F.R.C.S. 7 residents including Resident Surgical Officer and 3 House Surgeons. Vacant mid-February.

Apply to Senior Administrative Officer.

DENBIGH (near). LLANGWYFAN HOSPITAL. (370 Beds. Pulmonary and non-pulmonary tuberculosis. Hospital contains a major Thoracic Surgery Unit, Genito-urinary Unit, Orthopædic Unit and Children's Unit.) SENIOR HOUSE OFFICER (Male or Female) required at the above Hospital.

Applications to be sent forthwith to Group Secretary, Clwyd and Deeside Hospital Management Committee, "Rhianfa," Russell-road, Rhyl.

DERBY. DERBYSHIRE ROYAL INFIRMARY. (396 Beds. Recognised for training for F.R.C.S.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT REGISTRAR (orthopædics) required. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 20th February, 1956, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

DERBY. KINGSWAY HOSPITAL. Junior Hospital MEDICAL OFFICER (Male or Female) required at the above Mental Hospital (750 Beds). Single resident accommodation available.

Applications, giving full details of age, qualifications and experience, together with the names of 2 referees, to be addressed to the Medical Superintendent.

DEWSBURY, YORKSHIRE. STAINCLIFFE GENERAL HOSPITAL. Applications are invited for the appointment of HOUSE OFFICER (general surgery). Vacant now and tenable for 6 months. Recognised pre-registration appointment. The Hospital has a Surgical Unit of 52 Beds.

Applications, with full details and quoting this Journal to the Administrative Officer at the Hospital.

DONCASTER ROYAL INFIRMARY. (330 Beds.) Sheffield REGIONAL HOSPITAL BOARD. Whole-time RESIDENT MEDICAL REGISTRAR required. Post becomes vacant 19th April. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 20th February, 1956, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

DONCASTER ROYAL INFIRMARY. (330 Beds.) Don-CASTER HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE SURGEON. Approved as pre-registration post and recognised for F.R.C.S. Vacant early March.

Applications to the Secretary to the Committee, at the Doncaster Royal Infirmary.

DONCASTER ROYAL INFIRMARY. Applications are invited for the post of SENIOR HOUSE OFFICER in Ophthalmology. Recognised for D.O.

Applications to the Group Secretary, Doncaster Hospital Management Committee, at The Doncaster Royal Infirmary.

DONCASTER ROYAL INFIRMARY. (330 Beds. Recognised for training for F.R.C.S.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT SURGICAL REGISTRAR required. Appointment for 1 year in first instance.

Apply Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 20th February, 1956, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

DORCHESTER. DORSET COUNTY HOSPITAL. (113 Beds.) HOUSE SURGEON required (Male or Female). Resident post, now vacant and tenable for 6 months. Recognised for F.R.C.S. examination and approved for Pre-registration Service.

Applications, stating age, experience and qualifications, together with copy testimonials, to Group Secretary, West Dorset Hospital Management Committee, Damers-road, Dorchester, Dorset, immediately.

DURHAM. COUNTY HOSPITAL. (120 Beds.) **Pre**registration HOUSE SURGEON (orthopædics). The Hospital is the main Orthopædic and Accident Hospital for the area. Post vacant now.

Applications to Group Secretary, Dryburn Hospital, Durham.

FARNBOROUGH HOSPITAL, Kent. (800 Beds.) **House** SURGEON required for 6 months from 1st March. Recognised for F.R.C.S. Preference given to pre-registration candidates.

Apply, stating age, qualifications with dates, and experience, and naming 3 referees, to Administrative Officer, by 18th February, quoting reference H/S.

EPSOM. THE MENTAL HOSPITALS' GROUP LABORA-TORY. SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for 2 non-resident, whole-time posts of REGISTRAR in Pathology. The Laboratory affords facilities for training and experience in all branches of pathology with opportunities for specialisation and research. In addition to working at the Laboratory, appointed applicants will be required to visit and work at the hospitals served by the Laboratory.

Applications to be made on forms, returnable by 25th February, 1956, to be obtained from the Group Pathologist, the Mental Hospitals' Group Laboratory, at West Park Hospital, Epsom, from whom full information may be obtained and with whom an appointment to see the Laboratory may be arranged.

ENFIELD, MIDDLESEX. CHASE FARM HOSPITAL. RESIDENT SENIOR HOUSE OFFICER required in the Department of Anæsthesia. Vacant end of February (12 months appointment). The post is recognised for the D.A. and F.F.A.R.C.S. and affords a wide range of practical experience and tuition under Consultant supervision.

Applications, giving names and addresses of 2 referees, to the Group Secretary, Enfield Group Hospital Management Committee.

EAST ANGLIAN REGIONAL HOSPITAL BOARD.

(1) REGISTRAR in Psychiatry, St. Andrew's Hospital, Thorpe, Norwich (1250 Beds). Full range of modern psychiatric treatments and a number of associated general hospital outpatient clinics. Married or single quarters available. Appointment for 1 year, renewable for second year.

(2) REGISTRAR in Mental Deficiency and Child Psychiatry, Little Plumstead (near Norwich) Mental Deficiency Group of Hospitals and Child Psychiatry Service. The Group (1000 Beds), which is progressive and the centre for much outpatient work including child guidance clinics, is recognised as a training centre for the D.P.M. by the Conjoint Board for 1 year. Accommodation available.

Applications, stating age, experience, and names of 3 referees to Secretary of Board, 117, Chesterton-road, Cambridge, by 27th February, 1956.

EAST ANGLIAN REGIONAL HOSPITAL BOARD.

(1) SURGICAL REGISTRAR, North Cambridgeshire Hospital, Wisbech. Post provides good training and experience in both general and orthopædic surgery. Appointment for 1 year, renewable for second year. Candidates invited to visit Hospital by direct arrangement with Hospital Management Committee Secretary at the Hospital.

(2) REGISTRAR in Obstetrics and Gynæcology, Peterborough Group of hospitals. Unit consists of 73 obstetric beds and a busy Gynæcological Department. Recognised for M.R.C.O.G. in obstetrics. Appointment for 1 year, renewable for second year. Candidates invited to visit Hospital by direct arrangement with Hospital Management Committee Secretary, Memorial Hospital, Peterborough.

Applications, stating age, experience and names of 3 referees, to Secretary of Board, 117, Chesterton-road, Cambridge, by 20th February, 1956.

EPPING. ST. MARGARET'S HOSPITAL. (480 Beds.) Applications are invited from registered medical practitioners for the posts of HOUSE PHYSICIANS (2) at the above Hospital as from 20th March, 1956. The appointments, which are in general medicine, are for 6 months, including duties at Honey Lane Hospital for part of this time.

Applications, with 2 recent testimonials, to reach Group Secretary, St. Margaret's Hospital, Epping, by 24th February, 1956.

GLASGOW. BELVIDERE INFECTIOUS DISEASES HOSPITAL. JUNIOR HOSPITAL MEDICAL OFFICER. Duties primarily in infectious diseases but may include work in tuberculosis.

Apply in writing, giving 3 names for reference, to the Secretary, Board of Management for Glasgow Royal Infirmary and Associated Hospitals, 135, Buchanan-street, Glasgow, C.1.

GLASGOW. ROYAL HOSPITAL FOR SICK CHILDREN, YORKHILL, GLASGOW. Applications are invited for the post of SENIOR HOUSE OFFICER (resident) in Surgical Pædiatrics at the above Hospital. National Health Service salary and conditions of service.

Applications, with names of 3 referees, to be lodged with the Secretary, Board of Management for Glasgow and District Children's Hospitals, 86, St. Vincent-street, Glasgow, C.2.

GRIMSBY. SPRINGFIELD HOSPITAL. (210 Beds.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT REGISTRAR (chest and infectious diseases) required. This Hospital contains an active Chest Unit and appointee will also have duties at Central Chest Clinic. Unfurnished house is available for a married man. Post becomes vacant 1st April. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 20th February, 1956, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

HUDDERSFIELD ROYAL INFIRMARY. (312 Beds.) HUDDERSFIELD HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEON (Female) required to commence duty immediately. The post is recognised as a pre-registration appointment. Salary in accordance with national scale.

Applications, together with copies of 3 recent testimonials, to be addressed to the undersigned as soon as possible.

H. J. JOHNSON, Secretary to the Management Committee.

The Royal Infirmary, Huddersfield.

HUDDERSFIELD ROYAL INFIRMARY. (312 Beds.) Applications are invited from provisionally registered or registered medical practitioners for the post of HOUSE PHYSICIAN, to commence duties on 1st March, 1956. Salary in accordance with national scale.

Applications, together with copies of 3 recent testimonials, to be addressed to the undersigned as soon as possible.

H. J. JOHNSON, Secretary,
Huddersfield Hospital Management Committee.

The Royal Infirmary, Huddersfield.

HEMEL HEMPSTEAD, HERTFORDSHIRE. WEST HERTS HOSPITAL. CASUALTY OFFICER (Junior Hospital Medical Officer) required.

Applications, stating 2 names for reference, should be sent to the Hospital Secretary.

HEREFORD GENERAL HOSPITAL. (154 Beds.) **House** OFFICER (pædiatrics) required.

Applications, with copies of 2 recent testimonials, to Group Secretary, Hospital Management Committee, Victoria House, Eign-street, Hereford.

HEREFORD GENERAL HOSPITAL. (154 Beds.) **House** OFFICER (medicine) required.

Applications, with copies of 2 recent testimonials, to Group Secretary, Hospital Management Committee, Victoria House, Eign-street, Hereford.

HALIFAX GENERAL HOSPITAL. (425 Beds.) **House** SURGEON (general surgery) required. Approved pre-registration appointment. Post vacant 1st March, 1956.

Applications to the Group Secretary, Royal Halifax Infirmary, Halifax.

HASTINGS. ROYAL EAST SUSSEX HOSPITAL. (150 Beds.) HOUSE SURGEON required. Pre-registration post, vacant now. National scale of salary.

Apply to Hospital Administrator.

HERTFORD COUNTY HOSPITAL. (171 Beds. Hospital situated 21 miles from London.) RESIDENT CASUALTY OFFICER (Senior House Officer grade) with attachment to Paediatrician and Ophthalmic Consultant. Salary £745 p.a., less £130 p.a. residential emoluments. Recognised under F.R.C.S. regulations. Appointment to commence as soon as possible.

Apply, with full details and references, to Group Secretary, Hertford Hospital Management Committee, County Hospital, Hertford, Herts.

HOUNSLOW CHEST CLINIC, 28, Bell-road, Hounslow, MIDDLESEX. NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. REGISTRAR (whole-time), non-resident, required at above Clinic. Post vacant now. Clinic has associated beds at Ashford Hospital, Middlesex, and West Middlesex Hospital. Good general medical experience essential and special experience in diseases of the chest desirable. Candidates may visit Clinic by direct appointment.

Application forms obtainable from, and returnable to, the Secretary, Staines Group Hospital Management Committee, Ashford Hospital, London-road, Ashford, Middlesex, by 21st February, 1956.

HOVE GENERAL HOSPITAL, Sussex. (75 Beds.) RESIDENT HOUSE SURGEON AND CASUALTY OFFICER required immediately. Post recognised for F.R.C.S., but not pre-registration.

Applications, stating age, qualifications, experience, and naming 2 referees, to the Administrative Officer as soon as possible.

IPSWICH AND EAST SUFFOLK HOSPITAL. Anglesea ROAD WING. (356 Beds.) Applications are invited for the post of HOUSE SURGEON to the General Consulting Surgeon. The post is recognised for pre-registration and for the F.R.C.S. examinations.

Applications, with copies of recent testimonials, to Hospital Secretary.

ISLE OF MAN. BALLAMONA HOSPITAL. Applications are invited for the post of SENIOR HOUSE OFFICER at the above Mental Hospital (350 Beds, admission-rate 200 annually) which undertakes all modern methods in the treatment of mental and nervous diseases as well as mental deficiency, and is recognised for training for the Conjoint D.P.M. A house, furnished or part-furnished, or accommodation, is available. The terms and conditions of service are those of the Isle of Man Health Service—the same as those of England and Wales. Superannuation is transferable. The Hospital may be visited by appointment.

Those interested should write for further details, and applications, stating age, nationality, qualifications, and experience, together with the names of 2 referees, should be sent to the Medical Superintendent.

ISLEWORTH. WEST MIDDLESEX HOSPITAL. House OFFICER (General Surgical Unit (approximately 76 Beds) and large outpatient clinics). Post vacant 16th April, 1956.

Applications to Group Secretary, South West Middlesex Hospital Management Committee, West Middlesex Hospital, Isleworth, Middlesex, by 21st February.

KENDAL. WESTMORLAND COUNTY HOSPITAL. (82 Beds.) RESIDENT SENIOR HOUSE OFFICER (medical). Duties include the care of acute cases under the supervision of 2 Consultant Physicians, and attendance at consultative clinics. The post is tenable for 1 year.

Applications, with full particulars, and names of 2 referees, to be addressed to Group Secretary, Royal Lancaster Infirmary, Lancaster.

LEEDS REGIONAL HOSPITAL BOARD. Registrar vacancies.

Anæsthetics

(*a*) Huddersfield Group (approximately 225 Beds in the surgical specialties). Non-resident.

(*b*) Halifax Group (approximately 280 Beds in the surgical specialties). Resident.

Obstetrics and Gynæcology

Wakefield A and B Groups (with occasional duties in Pontefract and Goole Groups). Non-resident. Offers good experience but is not at present recognised by the R.C.O.G. for Membership purposes. (Aggregate of 120 obstetric and 50 gynæcological beds.)

Orthopædic Surgery

Marguerite Hepton Memorial Orthopædic Hospital, Thorp Arch, near Wetherby (75 long-stay children's beds). A 3-bedroomed partly furnished house is available in the Hospital grounds.

Psychiatry

Stanley Royd Hospital, Wakefield (approximately 2000 Beds). Accommodation for single person available if required. If desired facilities for attendance at the Leeds University will be provided if the successful candidate is studying for the D.P.M.

Applications, stating age, qualifications, and details of present and previous appointments with dates, together with the names and addresses of 3 referees, to the Secretary, Joint Registrars Committee, Park-parade, Harrogate, by 23rd February, 1956.

LEAMINGTON SPA. WARNEFORD GENERAL HOS-PITAL. (197 Beds.) CASUALTY OFFICER (Senior House Officer), Male or Female, resident or non-resident. Post vacant 1st March, 1956, and suitable for one reading for higher qualifications, being recognised for F.R.C.S., affording contact with all Specialist Units in the Hospital.

Applications, with names and addresses of 3 referees, to Hospital Secretary.

LINCOLN. COUNTY HOSPITAL. Locum Tenens House PHYSICIAN required.

Applications to Group Secretary.

LINCOLN. HARMSTON HALL HOSPITAL. Junior HOSPITAL MEDICAL OFFICER (resident) required for group of mental deficiency hospitals in Lincolnshire (943 Beds). Salary scale £775–£50–£1075 with national terms and conditions of service. Travelling expenses as approved. Furnished apartments charged at £160 p.a.

Applications, with full details of age, education, qualifications, previous appointments with dates, and 2 names for reference, to be sent to the Group Secretary, Harmston Hall, Lincoln, within 10 days.

LIVERPOOL. THE UNITED LIVERPOOL HOSPITALS. Applications are invited for the post of RESIDENT HOUSE SURGEON to the Orthopædic Department at the Royal Southern Hospital for the 6 months from 1st March, 1956, to 31st August, 1956. The post is open to registered practitioners and pre-registration applicants.

Apply, by 21st February, on form obtainable from the Secretary, The United Liverpool Hospitals, 80, Rodney-street, Liverpool, 1.

LIVERPOOL. THE UNITED LIVERPOOL HOSPITALS. ST. PAUL'S EYE HOSPITAL. Applications are invited for a post of SENIOR HOUSE OFFICER in Ophthalmology for the period to 30th September, 1956.

Apply by 23rd February on form obtainable from the Secretary, The United Liverpool Hospitals, 80, Rodney-street, Liverpool, 1.

LANCASTER. ROYAL LANCASTER INFIRMARY. (240 Beds.) RESIDENT HOUSE SURGEON (pre-registration). Successful applicant will work with Consultant Surgical Unit and attend consultative clinics. Post recognised for F.R.C.S.

Applications, with names of 2 referees, to Secretary, Royal Lancaster Infirmary, Lancaster.

LOWESTOFT AND NORTH SUFFOLK HOSPITAL, LOWESTOFT. SENIOR HOUSE SURGEON (resident) required at once. Salary £745 p.a. Furnished flat available for married Officer, if required. The Hospital has a Consultant General Surgeon and is regularly visited by Consultants in all specialties from the Norfolk and Norwich Hospital. Membership of a Medical Defence Society is a condition of appointment.

Applications, stating age, qualifications and experience with names and addresses of 2 referees, to Hospital Secretary.

MAIDSTONE. KENT COUNTY OPHTHALMIC AND AURAL HOSPITAL. (113 Beds.) MID-KENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of SENIOR HOUSE SURGEON in the Ophthalmic Department of the above Hospital. The Hospital is recognised by the Examining Board for the F.R.C.S. and the D.O. Salary £745 a year, less £150 a year for residential emoluments.

Applications should be forwarded as soon as possible to the Administrative Officer, Kent County Ophthalmic and Aural Hospital, Church-street, Maidstone.

MANCHESTER REGIONAL HOSPITAL BOARD. Applications are invited for a post of REGISTRAR in the Obstetric and Gynæcology Department in the Barrow and Furness Group of hospitals. The post is available almost immediately. 72 obstetric gynæcological beds in main unit; outpatient departments and extensive surgical experience. Recognised for D.Obst.R.C.O.G.

Applications to Group Secretary, Barrow and Furness Hospital Management Committee, 52, Paradise-street, Barrow-in-Furness, not later than 22nd February, 1956.

MANCHESTER REGIONAL HOSPITAL BOARD. Birch HILL HOSPITAL. REGISTRAR in Obstetrics and Gynæcology (resident). Post vacant March. Recognised for D.Obst.R.C.O.G. Married quarters available.

Apply at once to Group Secretary, Central Office, Birch Hill Hospital, Rochdale, Lancs.

MANCHESTER REGIONAL HOSPITAL BOARD. South MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. WYTHENSHAWE HOSPITAL, MANCHESTER, 23. The Board invite applications from registered practitioners for the post of MEDICAL REGISTRAR at the above Hospital.

Applications, stating age, qualifications, present post, experience, and names of 2 referees, to be forwarded immediately to the Group Secretary, Withington Hospital, Manchester, 20.

MANCHESTER REGIONAL HOSPITAL BOARD. North AND MID-CHESHIRE GROUP OF HOSPITALS. ALTRINCHAM GENERAL HOSPITAL AND ANNEXE, near MANCHESTER. (130 Beds. Recognised under F.R.C.S. regulations.) Applications are invited for the post of RESIDENT SURGICAL REGISTRAR, to commence at end of April, 1956. This appointment, in a busy general hospital, with duties at other hospitals in the Group, offers excellent opportunities of practical surgical experience to suitably qualified candidates.

Applications, together with 2 recent testimonials, to be sent to Group Secretary, North and Mid-Cheshire Hospital Management Committee, Sinderland-road, Altrincham, Cheshire.

MANCHESTER. DUCHESS OF YORK HOSPITAL FOR BABIES AND WYTHENSHAWE HOSPITAL. SOUTH MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER, vacant 1st April. A joint post of not less than 3 months and preferably 6 months at each Hospital, is recognised as training for the D.C.H. The Duchess of York Hospital is also attached to the Manchester University Department of Child Health.

Applications, with full details, to the Group Secretary, Withington Hospital, Manchester, 20 within 7 days of appearance of this advertisement.

MANCHESTER, 19. DUCHESS OF YORK HOSPITAL FOR BABIES. SOUTH MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. HOUSE OFFICER (Male or Female) required for 6 months commencing 15th May at the above Hospital, which is associated with the Manchester University for teaching purposes.

Applications, with copies of 3 testimonials, to be sent to the Administrative Officer of the Hospital immediately.

MANCHESTER. WEST MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. PARK HOSPITAL, DAVYHULME. Applications are invited from suitably qualified and experienced Male or Female candidates for RESIDENT SURGICAL REGISTRAR (Thoracic Unit). This Hospital is a General Hospital of 433 Beds. It carries out by far the major part of the Manchester Region's Cardiac and non-tuberculous thoracic surgery, in addition to all other major specialties. The total number of resident medical staff is 20. The successful candidate will be expected to work with each of the 3 Consultant Thoracic Surgeons attached to this unit of 50 beds (including 10 children's beds).

Application forms from the Secretary.

MANCHESTER, 20. WITHINGTON HOSPITAL. South MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (surgical) including casualty duties, vacant 18th March, 1956. The post is recognised by the Royal College of Surgeons for the Final F.R.C.S. examination and possession of the Primary F.R.C.S. will be an advantage. The Hospital is recognised by the Manchester University for the teaching of undergraduate surgical students.

Applications, stating age, experience, and names of 2 referees, to be forwarded to the Group Secretary at the Hospital as soon as possible.

MANCHESTER, 23. WYTHENSHAWE HOSPITAL. SOUTH MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of RESIDENT SENIOR HOUSE OFFICER (surgical) at the above Hospital. General surgery and casualty duties.

Applications, with full details, to be forwarded to the Group Secretary, Withington Hospital, Manchester, 20, immediately.

MIDDLESBROUGH. NORTH ORMESBY HOSPITAL. TEES-SIDE HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of HOUSE PHYSICIANS (Male or Female). There are 2 vacancies and both are recognised for Pre-registration Service under the Medical Act, 1950.

Applications, stating full details and giving 2 names for reference, should be addressed to the Hospital Secretary.

MIDDLESBROUGH. NORTH ORMESBY HOSPITAL. TEES-SIDE HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of HOUSE OFFICERS (surgical), 2 required—Male or Female. The appointments are recognised for the F.R.C.S. examination and for Pre-registration Service under the Medical Act, 1950.

Applications, stating full details and giving 2 names for reference, should be addressed to the Hospital Secretary.

MID GLAMORGAN HOSPITAL MANAGEMENT COM-MITTEE. Applications are invited for the following vacancies :—

Neath General Hospital, Neath (412 Beds)
HOUSE SURGEON.

Bridgend General Hospital, Quarella-road, Bridgend (381 Beds)
SENIOR HOUSE OFFICER (E.N.T.).

These hospitals are recognised for the major diplomas and approved by the General Medical Council for Pre-registration Services under Section II of the Medical Act, 1950.

Applications, naming 2 referees, to be addressed to the Group Secretary of the Committee, 8, Wind-street, Neath.

MITCHAM. WILSON HOSPITAL, Cranmer-road, MITCHAM, SURREY. RESIDENT SENIOR HOUSE SURGEON, vacant end of March. This post in small but busy general hospital provides good and varied experience in diagnosis, treatment and operative procedure.

Applications, stating age, qualifications and experience, and the names of referees, to be sent to the Group Secretary, St. Helier Hospital, Carshalton, Surrey.

NEWCASTLE REGIONAL HOSPITAL BOARD. Durham HOSPITAL MANAGEMENT COMMITTEE. SENIOR REGISTRAR PHYSICIAN (whole-time), mainly at Dryburn Hospital (303 Beds). Single accommodation available.

Applications, with names and addresses of 3 referees, to Deputy Senior Administrative Medical Officer, Newcastle Regional Hospital Board, Benfield-road, Newcastle upon Tyne, 6, within 28 days.

NEWMARKET GENERAL HOSPITAL, Suffolk. Applications are invited for the post of HOUSE PHYSICIAN, vacant 25th March, 1956. Duties include house charge of general medical and pulmonary tuberculosis beds. The post is recognised for pre-registration, is resident and tenable for 6 months. Salary in accordance with national scale.

Applications, together with 3 recent testimonials, to Medical Superintendent.

NEWPORT, ISLE OF WIGHT. ST. MARY'S HOSPITAL. (346 Beds.) ISLE OF WIGHT GROUP HOSPITAL MANAGEMENT COMMITTEE. RESIDENT HOUSE SURGEON. Post vacant 22nd March. Approved for Pre-registration Service, and recognised for F.R.C.S.

Applications, with names of 2 referees, to Hospital Secretary.

NOTTINGHAM GENERAL HOSPITAL. Applications are invited from registered medical practitioners for the post of SENIOR HOUSE OFFICER (casualty); duties to commence 15th March. Establishment 3. Recognised for F.R.C.S. Post offers wide experience of casualty work.

Applications, stating age, nationality, qualifications and experience, together with copies of testimonials, to be sent to the Secretary, General Hospital, Nottingham.

NOTTINGHAM GENERAL HOSPITAL. Applications are invited from registered medical practitioners for the post of SENIOR ORTHOPÆDIC AND FRACTURE HOUSE OFFICER, duties to commence about 11th March. The post offers exceptional experience in traumatic surgery. Salary and conditions of service in accordance with Ministry regulations.

Applications, stating age, qualifications and experience, nationality, &c., together with copies of testimonials, to be sent to the Group Secretary.

NOTTINGHAM GENERAL HOSPITAL. Resident HOUSE SURGEON (pre-registration—first or second post) required as soon as possible for 6 months.

Applications, stating age, qualifications and experience, together with copies of testimonials, to be sent to the Group Secretary.

NOTTINGHAM AND MIDLAND EYE INFIRMARY. Required, SENIOR HOUSE OFFICER, duties to commence on or about 1st March, 1956. Salary and conditions of service in accordance with Ministry regulations.

Applications, stating age, qualifications, and experience, together with copies of testimonials, to be sent to the Group Secretary, General Hospital, Nottingham.

OXFORD. THE UNITED OXFORD HOSPITALS. Applications are invited for the post of RESIDENT MEDICAL OFFICER to The Slade Hospital, Oxford, to commence as near as possible to 1st March. The post is mainly concerned with infectious diseases (36 Beds) and with early cases of chest disease (14 Beds). There will also be occasional responsibility for dermatological and venereal disease cases, and there is an excellent opportunity for study. Salary at the Junior Hospital Medical Officer scale (£775–£1075).

Applications, with full particulars of qualifications and experience and the names of 2 referees, to be sent to the Administrator, Radcliffe Infirmary, Oxford, to arrive not later than 25th February.

PLYMOUTH. SOUTH DEVON AND EAST CORNWALL HOSPITAL. DEPARTMENT OF OBSTETRICS AND GYNÆCOLOGY. Applications invited from duly qualified and registered medical practitioners for the appointment of SENIOR HOUSE OFFICER in Obstetrics and Gynæcology, vacant 1st April, 1956. There will be additional duties at the Flete Maternity Home, and the Alexandra Maternity Home, which are parts of the Department. Candidates should have had previous experience in a department of obstetrics and gynæcology. The appointment will be for a period of 12 months. Salary £745 p.a. Terms and conditions of service are in accordance with the National Health Service terms. The post is recognised by the Royal College of Obstetricians and Gynæcologists for the Membership examination of the College.

Applications, stating age, nationality, qualifications, and experience, together with the names and addresses of 3 referees, should be sent to—

ARTHUR R. CASH, Group Secretary, Plymouth,
South Devon and East Cornwall General Hospital Group.
7, Nelson-gardens, Stoke, Plymouth.

PLYMOUTH. SOUTH DEVON AND EAST CORNWALL HOSPITAL.

SENIOR HOUSE OFFICER in Anæsthetics, vacant early March, 1956, Greenbank Road Section, recognised for the D.A. and Fellowship. The appointment will be for a period of 12 months.

SENIOR HOUSE OFFICER in Casualty, vacant February, 1956. The Central Casualty Department, Freedom Fields Section, recognised for the F.R.C.S.

Applications, stating age, nationality, qualifications and experience with names of 3 referees, to be sent to—

ARTHUR R. CASH, Group Secretary, Plymouth,
South Devon and East Cornwall General Hospital Group.
7, Nelson-gardens, Stoke, Plymouth.

PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE.

Royal Portsmouth Hospital (Orthopædic Department—104 Beds)
HOUSE OFFICER (pre-registration), vacant now.

Royal Portsmouth Hospital (70 surgical beds)
HOUSE SURGEON (pre-registration), vacant now.

Applications, stating age, experience, and qualifications, together with names of 2 referees, should be forwarded as soon as possible to L. C. ROGERS,
35, Grove-road South, Southsea.

READING. ROYAL BERKSHIRE HOSPITAL. (405 Beds.) Applications are invited from registered or provisionally registered medical practitioners, Male or Female, for post of RESIDENT HOUSE SURGEON (general surgery), vacant 21st February, 1956, for period of 6 months. Salary £425–£525 p.a., less £125 board-residence.

Write, stating age, qualifications with dates, nationality, present post, with copy of 1 recent testimonial, to Secretary.

READING. ROYAL BERKSHIRE HOSPITAL. (405 Beds.) Applications are invited from registered and provisionally registered medical practitioners, Male or Female, for post of RESIDENT HOUSE SURGEON (E.N.T.), vacant 21st February, 1956, for period of 6 months. Salary £425–£525 p.a., less £125 board-residence.

Write, stating age, qualifications with dates, nationality, present post, with copy of 1 recent testimonial, to Secretary.

RYDE. ROYAL ISLE OF WIGHT COUNTY HOSPITAL. ISLE OF WIGHT GROUP HOSPITAL MANAGEMENT COMMITTEE. SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for the post of CASUALTY AND ORTHOPÆDIC OFFICER either as Registrar (£850–£965) or as Junior Hospital Medical Officer (£775–£50–£1075). The appointment is recognised for the F.R.C.S. and is non-resident, but a furnished flat suitable for a married applicant is available if required.

Forms of application may be obtained from the Group Secretary, Hospital Management Committee Headquarters, Clatterford House, Carisbrooke, Isle of Wight, and should be returned not later than 25th February.

ROCHDALE AND DISTRICT HOSPITAL MANAGE-MENT COMMITTEE. BIRCH HILL HOSPITAL. SENIOR HOUSE OFFICER (obstetrics and gynæcology) required. The post is for 12 months in the first instance and is recognised for the D.Obst.R.C.O.G.

Apply at once to Group Secretary, Central Offices, Birch Hill Hospital, Rochdale.

RETFORD, NOTTINGHAMSHIRE. RAMPTON HOSPITAL. (1143 Beds for mental defectives exhibiting conduct disorders.) JUNIOR HOSPITAL MEDICAL OFFICER. Psychiatric experience an asset. Opportunity for study of psychopathic behaviour and grounding in mental deficiency methods. Hospital recognised for D.P.M. training. House or quarters available.

Applications, naming 3 referees, to Medical Superintendent, by 3rd March, 1956. Candidates may visit Hospital by appointment.

ROMFORD, ESSEX. VICTORIA HOSPITAL. (99 Beds.) RESIDENT HOUSE PHYSICIAN (Male) required from 17th March, 1956. Post not approved for pre-registration purposes.

Applications should be forwarded immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford.

ROMFORD, ESSEX. VICTORIA HOSPITAL. (99 Beds.) Temporary SURGICAL REGISTRAR (Male) required from 11th February, 1956.

Applications should be forwarded to Secretary, Romford Group Hospital Management Committee, at Oldchurch Hospital, Romford, as early as possible.

ROMFORD, ESSEX. OLDCHURCH HOSPITAL. (722 Beds.) ORTHOPÆDIC HOUSE SURGEON (resident) required in the near future in the Orthopædic and Accident Unit. The service consists of 100 Beds equally divided between traumatic surgery and "cold" orthopædics. Post is recognised for pre-registration purposes and for F.R.C.S.

Applications to be sent to Group Secretary, Romford Hospital Management Committee, Oldchurch Hospital, as soon as possible.

SCOTLAND. WESTERN REGIONAL HOSPITAL BOARD. Applications are invited for the following appointments, which will be for 1 year in the first instance :—

REGISTRAR in Bacteriology based at Stobhill Hospital, Glasgow.

REGISTRAR in Surgery based at the Royal Infirmary, Glasgow.

These appointments are subject to the National Health Service (Scotland) superannuation regulations.

Applications (12 copies), stating date of birth, qualifications, experience, present appointment, and the names of 3 referees, to reach the Secretary, Western Regional Hospital Board, 64, West Regent-street, Glasgow, by 18th February, 1956.

SCOTLAND. EASTERN REGIONAL HOSPITAL BOARD. Tuberculosis. DUNDEE AREA. Applications are invited for the post of REGISTRAR in Tuberculosis in the Dundee Area (Constitution Road Clinic, Dundee, and Ashludie Hospital, Monifieth) mainly for duty at the Chest Clinic. The post is non-resident and will be vacant on 1st March, 1956. Salary and conditions of service in accordance with national agreement.

Forms of application and further particulars from the Secretary to the Board, 430, Blackness-road, Dundee, with whom applications must be lodged not later than 25th February, 1956.

SCOTLAND. EASTERN REGIONAL HOSPITAL BOARD. General Surgery. STRACATHRO HOSPITAL, BRECHIN. Applications are invited for the post of REGISTRAR in General Surgery at Stracathro (General) Hospital, Brechin (675 Beds—110 for general surgery). Applicants should have had previous experience in general surgery. Salary and conditions of service in accordance with national agreement.

Forms of application and further particulars from the Secretary to the Board, 430, Blackness-road, Dundee, with whom applications must be lodged not later than 18th February, 1956.

SCOTLAND. EASTERN REGIONAL HOSPITAL BOARD. Pathology. MARYFIELD HOSPITAL, DUNDEE. Applications are invited for the post of SENIOR REGISTRAR in Pathology at Maryfield Hospital, Dundee (360 Beds), 1 of the 2 main general teaching hospitals associated with the University of St. Andrews. Salary and conditions of service in accordance with national agreement.

Forms of application and further particulars from the Secretary to the Board, 430, Blackness-road, Dundee, with whom applications must be lodged not later than 25th February, 1956.

SEDGEFIELD. WINTERTON HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for a Part-time General Practitioner CLINICAL ASSISTANT in Anæsthetics at this Hospital. The number of sessions required would be 3 sessions per week at present, increasing as the service warrants. Remuneration will be £175 p.a. per session.

Applications to be received, with the names of 2 referees, by the Group Secretary within 14 days of the date of this advertisement. C. W. GILL, Group Secretary.

Winterton, Sedgefield, Stockton-on-Tees, co. Durham.

SKIPTON (near). THE HOSPITAL, Grassington, near SKIPTON. Applications invited for RESIDENT MEDICAL OFFICER at above Hospital. Appointment is that of Senior House Officer or Junior Hospital Medical Officer, according to experience. The Hospital caters for tuberculosis patients, men and women. Accommodation available for single applicant.

Applications to Medical Superintendent.

SLOUGH, BUCKINGHAMSHIRE. UPTON HOSPITAL. WINDSOR GROUP HOSPITAL MANAGEMENT COMMITTEE. Locum HOUSE OFFICER (casualty) required. Experience provided in orthopædic and plastic cases.

Applications, stating age and qualifications, with copies of 2 testimonials, to Hospital Secretary.

SHEFFIELD CITY GENERAL HOSPITAL. (642 Beds. Recognised training hospital for the D.C.H.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT REGISTRAR (paediatrics) required. Post becomes vacant 20th April Appointment for 1 year in the first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 20th February, 1956, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

SHREWSBURY. ROYAL SALOP INFIRMARY AND COPTHORNE HOSPITAL. (500 Beds.) GYNÆCOLOGICAL HOUSE SURGEON. 50 gynæcological beds and 2 House Surgeons. Post recognised for M.R.C.O.G. Vacant 12th March, 1956.

Applications, with copy testimonials, to Group Secretary, Shrewsbury Hospital Group, Royal Salop Infirmary, Shrewsbury.

SOUTH BRENT, DEVON. DIDWORTHY CHEST HOSPITAL. Applications are invited from registered medical practitioners for the post of ASSISTANT MEDICAL OFFICER (Junior Hospital Medical Officer grade) at the above Hospital. This is a Hospital of 128 Beds for the treatment of pulmonary tuberculosis and includes a major Thoracic Surgery Unit. Unfurnished bungalow available on Hospital estate.

Applications, stating age, nationality and qualifications, together with names of 2 referees, should be sent, as soon as possible, to the Group Secretary, Plymouth Special Hospital Management Committee, 8, Nelson-gardens, Stoke, Plymouth.

SOUTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for an appointment as Whole-time REGISTRAR in Ophthalmology to fill a vacancy in the approved trainee establishment at the Tunbridge Wells Group of hospitals for duties associated with the Corneo-Plastic Unit and Eye Bank at Queen Victoria Hospital, East Grinstead. Candidates must have had resident experience in ophthalmology and the possession of a higher qualification or the appropriate diploma is desirable. The appointment will be in accordance with the terms and conditions of service of hospital medical and dental staffs (England and Wales), and will be for 1 year in the first instance.

Applications, giving particulars of age, qualifications and experience with relevant dates, together with the names and addresses of 2 referees, to be sent to the Secretary, Registrars Committee, South East Metropolitan Regional Hospital Board, 11, Portland-place, W.1, not later than 25th February, 1956.

SOUTHAMPTON. ROYAL SOUTH HANTS HOSPITAL. (278 Beds.) CASUALTY OFFICER/SENIOR HOUSE OFFICER (orthopædic) required for the above Hospital (Orthopædic Unit 74 Beds) in February. This Hospital is the centre to which all trauma from a large industrial town and port is directed, thus providing excellent experience in the treatment of traumatic conditions.

Applications, with copies of testimonials, to be submitted as soon as possible to the Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON. ROYAL SOUTH HANTS HOSPITAL. (278 Beds.) ORTHOPÆDIC HOUSE SURGEON required. Post recognised for Pre-registration Service and tenable for 6 months. The Hospital is the centre to which all trauma from a large industrial town and port is directed thus providing excellent experience in the treatment of traumatic conditions; patients with orthopædic conditions are also drawn from a wide area.

Applications, with copies of testimonials, should be sent as soon as possible to the Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHEND GENERAL HOSPITAL. Applications are invited for 2 posts of RESIDENT ANÆSTHETIST (Senior House Officer grade); both vacant 1st April, 1956. 1 post will be tenable for 18 months and the other for 6 months. The appointment held for 18 months will involve duties for 6 months at the General Hospital, Southend, followed by 6 months at the General Hospital, Rochford, and 6 months at hospitals in the Group generally. Both appointments are recognised as fulfilling the conditions of the F.F.A.R.C.S. and the D.A.

Applications, stating post applied for, with particulars of qualifications, experience, &c., should reach the undersigned at the General Hospital, Southend, by 23rd February, 1956.

J. C. FIELD, Secretary.

STOCKPORT. STEPPING HILL HOSPITAL. (535 Beds.) Applications are invited for the post of RESIDENT SENIOR HOUSE OFFICER (surgery), vacant 23rd February, 1956. The post is recognised for the F.R.C.S.

Applications, stating age, experience and qualifications, together with copies of 2 testimonials, to be addressed to the Group Secretary, Stockport and Buxton Hospital Management Committee, 59B, Shaw-heath, Stockport, Cheshire, immediately.

STOCKPORT INFIRMARY, Stockport. (163 Beds.) Applications are invited for the post of SENIOR HOUSE OFFICER (Resident Surgical Officer), vacant 18th February, 1956. The post is recognised for the F.R.C.S.

Applications, stating age, experience, and qualifications, together with copies of 2 testimonials, to be addressed to the Secretary, Stockport and Buxton Hospital Management Committee, 59B, Shaw-heath, Stockport, Cheshire.

SULLY HOSPITAL, Sully, near Penarth, Glamorganshire. THORACIC CENTRE. (324 Beds.) SENIOR HOUSE OFFICER (surgical) required as soon as possible. Experience available in investigation and treatment of all lung and heart diseases in adults and children.

Form of application from Group Secretary, Cardiff Hospita Management Committee, 44, Cathedral road, Cardiff.

SUNDERLAND. ROYAL INFIRMARY. (300 Beds.) HOUSE OFFICER (Male) required immediately for duties in Gynæcological and Urological Units. Provisionally registered practitioners may apply.

Applications, naming 2 referees, to the Hospital Secretary Royal Infirmary, Sunderland.

TAPLOW, near MAIDENHEAD. CANADIAN RED CROSS MEMORIAL HOSPITAL. Applications invited for post of HOUSE PHYSICIAN to the Special Unit for Research in Juvenile Rheumatism, vacant 6th April. Post offers scope for those interested in research, pædiatrics, rheumatology or cardiology.

Applications, stating age, qualifications, and experience with copies of 2 testimonials, to Hospital Secretary.

TAPLOW, near MAIDENHEAD. CANADIAN RED CROSS MEMORIAL HOSPITAL. HOUSE PHYSICIAN required for post vacant 28th March. Preference given to persons seeking pre-registration post.

Applications, stating age, experience and qualifications with dates, with copies of 2 testimonials, to Hospital Secretary.

ST. HELENS AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. The following resident House Officer posts become vacant on 1st March, 1956 :—

St. Helens Hospital (196 Beds)
HOUSE SURGEON.

Whiston Hospital, Prescot (892 Beds)
HOUSE SURGEON (orthopædic).

The posts are recognised for Pre-registration Service.

Applications, stating age, date of qualification and experience and giving 2 names for reference, should be forwarded to the Secretary, Group Office, Whiston Hospital, Prescot, immediately. Please state for which position application is made.

WAKEFIELD. CLAYTON HOSPITAL. (200 Beds.) HOUSE SURGEON (general surgery, gynæcology and dental) required at the above Hospital. This is a pre-registration post recognised for F.R.C.S. and is vacant immediately. Salary and conditions of service in accordance with national recommendations.

Applications to the Group Secretary, Hospital Management Committee No. 9, Wakefield A Group, 113, Northgate, Wakefield.

WARWICK (near). CENTRAL MENTAL HOSPITAL. (1400 Beds.) SENIOR HOUSE OFFICER required. Neurosis Unit. Adult and child psychiatry clinics, Departments of Electroencephalography, Occupational Therapy, Psychology, and Social Work. Recognised for D.P.M. Married or single quarters. Salary £745 p.a.

Applications, with names and addresses of 3 referees, to Medical Superintendent within 14 days of appearance of this advertisement.

WATFORD, HERTFORDSHIRE. THE PEACE MEMORIAL HOSPITAL. (198 Beds.) Applications are invited for the post of SENIOR HOUSE OFFICER in the new Casualty and Outpatient Department of the above Hospital. The post is recognised for F.R.C.S. examination. Salary according to the National Health Service scale.

Applications, with copies of 2 recent testimonials, to the Administrator.

WEST BROMWICH AND DISTRICT GENERAL HOSPITAL. (144 Beds.) HOUSE SURGEON, vacant immediately. Pre-registration.

Applications, with 3 recent testimonials, to Group Secretary, West Bromwich and District Hospital Management Committee, Edward-street, West Bromwich.

WIGAN. ROYAL ALBERT EDWARD INFIRMARY. (200 Beds.) SENIOR HOUSE OFFICER in Orthopædic Surgery. Post vacant 22nd February, 1956.

Applications to Secretary, Wigan Infirmary.

WILLERBY, EAST YORKSHIRE (near HULL). DE LA POLE HOSPITAL. (1174 Beds—mental illness and nervous disorders.) JUNIOR HOSPITAL MEDICAL OFFICER. Hospital has admission rate of over 850 annually. Modern reception hospital, villas and neurosis unit. All modern methods of treatment practised. Accepted for D.P.M. training. Residential.

Application forms from Group Secretary, Hull B Hospital Management Committee, at the above address.

WINCHESTER. ROYAL HAMPSHIRE COUNTY HOSPITAL. (315 Beds.) HOUSE SURGEON (post recognised by Royal College of Surgeons) required for general surgery with some E.N.T. duties. Approved pre-registration post. Vacant early February.

Applications, with copies of 2 testimonials, to the Secretary.

WOKING. ROWLEY BRISTOW ORTHOPÆDIC HOSPITAL, PYRFORD, WOKING, SURREY. (200 Beds.) Applications are invited for the post of RESIDENT HOUSE SURGEON (Senior House Officer grade), immediate vacancy. This post is recognised for the F.R.C.S. examination and will include a session per week at St. Thomas's Hospital, London.

Applications should reach the Secretary within 14 days of the date of this advertisement.

WOKING. VICTORIA HOSPITAL, Woking, Surrey. (72 Beds.) SENIOR HOUSE OFFICER (post-registration appointment) required for medical and surgical duties.

Apply, with 2 testimonials, to Hospital Secretary.

WOODFORD BRIDGE, WOODFORD GREEN, ESSEX. CLAYBURY HOSPITAL. (For mental and nervous disorders.) Applications are invited for the post of Full-time SENIOR HOUSE OFFICER (resident or non-resident). Board-residence for an unmarried applicant, for which a charge of £170 p.a. will be made, is available. The Hospital has over 2000 Beds and an admission-rate of over 1300 a year. All forms of treatment are undertaken and outpatient clinics at general hospitals are run by the Hospital staff. Clinical conferences and seminars for the D.P.M. candidates are held weekly and facilities will be offered to attend lectures in London (1 hour's journey). Previous general, but not psychiatric, experience necessary.

Applications, with full particulars and the names and addresses of 2 referees, to be sent to the Physician-Superintendent not later than 14 days after the appearance of this advertisement.

WORKINGTON INFIRMARY, Cumberland. (118 Beds. Pre-registration post. Recognised F.R.C.S.(Ed.).) HOUSE SURGEON (first, second or Senior House Officer post), vacant now.

Detailed applications with dates, and names of 2 referees, to Secretary immediately.

WOLVERHAMPTON. THE ROYAL HOSPITAL. (An Associated Hospital of the University of Birmingham Medical School.) 2 Locum HOUSE SURGEONS—1 with casualty duties vacant now, 1 vacant end of February. Pre-registration posts.

Apply Secretary, with copies of testimonials.

WOLVERHAMPTON. THE ROYAL HOSPITAL. (An Associated Hospital of the University of Birmingham Medical School.)

2 HOUSE OFFICERS (general surgery), vacant now. Pre-registration posts.

SENIOR HOUSE OFFICER or HOUSE OFFICER (Fracture and Orthopædic Department), vacant now.

SENIOR HOUSE OFFICER (Anæsthetist). Appointment recognised for D.A. and F.F.A.R.C.S. Vacant now.

Apply, Secretary, with copies of testimonials.

WORTHING HOSPITAL, Lyndhurst-road, Worthing. Applications are invited from registered medical practitioners for the undermentioned appointments, now vacant :—

(*a*) RESIDENT CASUALTY OFFICER (Senior House Officer grade).

(*b*) SURGICAL OFFICER (Senior House Officer grade).

Both posts are recognised for the revised Fellowship regulations in respect of the 6 months training required by candidates for the Final Fellowship examination.

Applications, stating age, qualifications, nationality and experience, together with copies of 2 recent testimonials, to be forwarded to the Hospital Secretary as soon as possible.

A. V. OAKTON, Group Secretary,
Worthing Group Hospital Management Committee.

YORK COUNTY HOSPITAL. (General Hospital of 269 Beds with full Consultant staff.) CASUALTY OFFICER (with charge of orthopædic beds) required 16th February, 1956. Junior Hospital Medical Officer grade. Salary £775–£50–£1075 p.a., less £153 p.a. if resident. Recognised for F.R.C.S.

Applications, giving age, nationality, qualifications, experience, and names of 2 referees, immediately to Group Secretary, York A and Tadcaster Hospital Management Committee, Bootham Park, York.

ST. JOHN'S, NEWFOUNDLAND, CANADA. PROVINCIAL DEPARTMENT OF HEALTH. GENERAL HOSPITAL. (475 Beds.) DEPARTMENT OF ANÆSTHESIA. Applications are invited for the post of RESIDENT IN ANÆSTHESIA. Salary is $3600 p.a. less $600 for board, maintenance, &c. Previous experience in anæsthetics desirable. This post is recognised by the Royal College of Surgeons and Physicians in Canada. Transportation to St. John's will be paid by the Hospital, and on completion of 1 years satisfactory service, return fare will be provided.

Applications, stating age, qualifications and experience, together with the names of 2 referees, should be sent immediately to DR. E. WILSON, Superintendent,
General Hospital, St. John's, Newfoundland, Canada.

U.S.A. BETHESDA HOSPITAL, Cincinnati 6, Ohio, U.S.A. ROTATING INTERNS—12 months; fully approved hospital for Intern and Resident Training, broad Teaching Programme, desires applications from graduate medical doctors. Liberal stipend, meals and room furnished.

Please apply to the Superintendent, giving details in full, first letter.

U.S.A. CAMBRIDGE, MASSACHUSETTS. Applications are invited for the positions of approved RESIDENCIES in Anesthesia for a 2-year period beginning 1st July, and 1st September, 1956. Salary $1800 first year and $3600 second year, and full maintenance. Training in all branches of anesthesia. There is affiliation with other hospitals. Opportunity to attend various meetings in anesthesiology throughout the New England Area.

Applications, stating age, nationality, qualifications, and experience, together with the names of their referees, should be forwarded to the Director of Anesthesiology, P.O. Box 39, Cambridge 38, Massachusetts. Travelling expenses to and from the U.S.A. will be paid, but particulars will be sent as soon as application is received. Please enclose recent photograph with application.

Public Appointments

BRIGHTON. COUNTY BOROUGH OF BRIGHTON. HEALTH DEPARTMENT. Applications are invited for the post of ASSISTANT MEDICAL OFFICER OF HEALTH. Diploma in Public Health essential. Duties mainly B.C.G. vaccination, infant welfare, and epidemiology. Salary £975–£1375 according to experience.

Application forms and further details from the Medical Officer of Health, Royal York Buildings, Brighton, 1.

FACTORY DOCTORS. Factories Acts, 1937 and 1948. The following appointments as Appointed Factory Doctor are vacant. Apply to Chief Inspector of Factories, 19, St. James's-square, London, S.W.1.

District	*County*	*Latest date for receipt of applications*
WHITHORN . .	WIGTOWN . .	25TH FEBRUARY, 1956
HAVERFORDWEST . .	PEMBROKE . .	25TH FEBRUARY, 1956
MARLOW . .	BUCKINGHAM . .	25TH FEBRUARY, 1956
WHITTLESEY . .	CAMBRIDGE . .	25TH FEBRUARY, 1956

MINISTRY OF LABOUR AND NATIONAL SERVICE. MEDICAL INSPECTORS OF FACTORIES. The Civil Service Commissioners invite applications from Men and Women for 4 permanent posts. 1 post is for a Hæmatologist. Interviews in London in latter part of March. Candidates must be aged 28 or more on 1st January, 1956. They must be registered medical practitioners, preferably with scientific and higher medical qualifications. Experience in industry or possession of D.I.H. an advantage. Duties include investigation into the occupational health of industrial workers and supervision of the work of appointed factory doctors. Starting salary (London) from £1595 at age 35 (lower for those under 35) to £2000 at 40 or over, rising to £2200. Somewhat lower outside London. Non-contributory pension and gratuity.

Further information on these and other posts and application form from Secretary, Civil Service Commission, 6, Burlington-gardens, London, W.1, quoting No. 4553/56/7. Application forms to be returned by 25th February, 1956.

LANCASHIRE COUNTY COUNCIL. Applications invited from registered medical practitioners for appointment of ASSISTANT DIVISIONAL MEDICAL OFFICERS in the Boroughs of Heywood, Leigh, St. Annes, and in areas adjacent to Oldham. Possession of D.P.H. desirable. Salary £975–£1375 p.a. Travelling and subsistence allowances where applicable.

Application forms and further particulars from County Medical Officer, Serial 518, East Cliff County Offices, Preston.

LONDON TRANSPORT EXECUTIVE. Applications are invited from registered medical practitioners for a post of MEDICAL OFFICER. The successful applicant will be responsible to the Chief Medical Officer for general clinical work and the medical supervision of working conditions. Commencing salary £1400 p.a. The appointment is subject to a medical examination. On completion of a satisfactory probationary period, the selected applicant will be expected to join a contributory superannuation scheme.

Applications, giving full details of qualifications and experience, together with the names of 3 referees, should be sent within 14 days of the appearance of this advertisement to the Recruitment and Training Officer (F/EV.566), London Transport Executive, 55, Broadway, S.W.1.

MINISTRY OF HEALTH. Limb Fitting Medical Officers. The Civil Service Commissioners invite applications from registered medical practitioners (Men and Women) for 3 permanent posts. Candidates must be aged 28 or more on 1st January, 1956. Interviews in London in latter part of March. Candidates should be experienced in orthopædic or general surgery. Duties comprise prescribing and supervision of fitting of artificial limbs, rehabilitation of those who have lost a limb, and provision of certain other surgical appliances. Starting salary (London) for 45½ hour week from £1685 at age 35 (lower for those under 35) to £2000 at 40 or over, rising to £2200. Somewhat lower outside London. Non-contributory pension and gratuity.

Further information on these and other posts and application form from Secretary, Civil Service Commission, 6, Burlington-gardens, London, W.1, quoting No. 4553/56/7. Application forms to be returned by 25th February, 1956.

MINISTRY OF HEALTH. Medical Officer (Physiologist). The Civil Service Commissioners invite applications from registered medical practitioners (Men and Women) for this permanent post. Candidates must be aged 28 or more on 1st January, 1956. Interviews in London in latter part of March. Candidates must be medical graduates with special knowledge of the physiology and biochemistry of nutrition, with experience of research, including field investigations. Duties include advising on nutritional subjects and the conducting of nutritional trials. Starting salary (for 45½-hour week) from £1685 at age 35 (lower for those under 35) to £2000 at 40 or over, rising to £2200. Non-contributory pension and gratuity.

Further information on this and other posts and application form from Secretary, Civil Service Commission, 6, Burlington-gardens, London, W.1, quoting No. 4553/56/7. Application forms to be returned by 25th February, 1956.

MINISTRY OF PENSIONS AND NATIONAL INSURANCE. PNEUMOCONIOSIS MEDICAL OFFICERS. The Civil Service Commissioners invite applications for 3 permanent posts for Men or Women aged 28 or more on 1st January, 1956. Interviews in London in latter part of March. Candidates must be registered medical practitioners, with a special interest and experience in chest work. Those appointed will be members of Pneumoconiosis Medical Panels. Their duties will include clinical examination of claimants to disablement benefit and supervision of radiographical work. Starting salary (London) from £1595 at age 35 (lower for those under 35) to £2000 at 40 or over, rising to £2200. Somewhat lower outside London. Non-contributory pension and gratuity.

Further information on these and other posts and application form from Secretary, Civil Service Commission, 6, Burlington-gardens, London, W.1, quoting No. 4553/56/7. Application forms to be returned by 25th February, 1956.

PEMBROKE. COUNTY OF PEMBROKE. Senior ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER. Applications are invited for the above appointment from registered medical practitioners. Candidates must have a special interest in child health work and should possess the D.P.H. or D.C.H. The salary will be within the scale £1175, rising by annual increments of £50 to £1575 depending on the experience and qualifications of the successful applicant.

Particulars of duties, conditions of appointment, and forms of application can be obtained from the County Medical Officer, 23, Hill-street, Haverfordwest, and completed application forms must be returned to the undersigned not later than 18th February, 1956.

H. LOUIS UNDERWOOD, Clerk of the County Council.

County Offices, Haverfordwest, 28th January, 1956.

PLYMOUTH. CITY OF PLYMOUTH. Applications invited for the superannuable post of ASSISTANT MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER from registered medical practitioners, Male or Female, with at least 3 years experience since qualification. D.P.H. or D.C.H. desirable. Salary scale £975–£50–£1375 p.a. Appointment terminable by 3 months notice on either side. The work will be primarily in the School Health and Maternity and Child Welfare Departments but other duties of a general public health nature may be allocated by the Medical Officer of Health.

Forms of application not provided. Applications to the undersigned stating age, marital state, qualifications, and experience, together with the names and addresses of 2 referees, not later than 20th February, 1956.

T. PEIRSON, Medical Officer of Health.

"Seven Trees," Lipson-road, Plymouth.

AMENDED ADVERTISEMENT

ST. HELENS. COUNTY BOROUGH OF ST. HELENS. Applications are invited for the appointment of DEPUTY MEDICAL OFFICER OF HEALTH AND DEPUTY PRINCIPAL SCHOOL MEDICAL OFFICER. The duties will include work in connection with all branches of the Health Services and the day-to-day administration of the School Health Service. Candidates must have had experience in a Public Health Department and possess the D.P.H. Salary will be at the rate of £1393 6s. 8d. p.a., rising by annual increments of £51 10s. to a maximum of £1650 16s. 8d. p.a. Travelling expenses or a motor-car allowance in accordance with the Council's scale will also be payable. The appointment will be subject to the provisions of the Local Government Superannuation Acts.

Forms of application may be obtained from the Medical Officer of Health, Town Hall, St. Helens, and completed applications accompanied by copies of not more than 3 recent testimonials should reach him not later than 20th February, 1956.

G. O'BRIEN, Medical Officer of Health.

Town Hall, St. Helens, January, 1956.

TRINIDAD HEALTH DEPARTMENT. Superintending MEDICAL OFFICER (Specialist) required to take charge of St. Ann's Mental Hospital, and the Psychiatric Clinic at the Colonial Hospital, Trinidad. He will also be required to act as Consultant to the Government in Mental conditions and to perform such other duties as the Director of Medical Services may from time to time direct. Candidates must possess qualifications registrable in the United Kingdom, the Diploma in Psychiatric Medicine, and have had at least 10 years post-graduate experience, including 5 years whole-time practice of psychiatry in a recognised hospital or medical school. Appointment can be made on a permanent basis with pension (non-contributory) at the age of 60. Candidates in the National Health Service may leave but retain their superannuation rights during their time abroad (up to 6 years) and receive a gratuity (taxable) of 20% of the aggregate of their salary after completion of their engagements. Salary is at the rate of $8400 (£1750) p.a. (1 British West Indies $ = 4s. 2d.). Consulting practice is permitted or an allowance at the rate of $480 (£100) p.a. is payable in lieu. Income-tax at local rates. Unfurnished quarters are provided at a rental of 8% of salary. Furniture may also be supplied by Government at an additional rental of 5% per annum of its value. Free passages for officer, wife, and children, not exceeding 5 persons in all on first appointment and up to 3 adult passages on leave. Local leave is permissible and generous home leave is granted after each tour. Educational facilities are available.

Application forms from the Director of Recruitment, Colonial Office, Sanctuary Buildings, Great Smith-street, London, S.W.1 (quoting reference No. BCD.117/38/027).

General Practice

For an Executive Council post (England and Wales) apply on form E.C.16A obtainable from the council. Mark envelope "Vacancy."

TUNBRIDGE WELLS, KENT. Applications invited for VACANCY (urban). List at present approximately 2330. Residence and surgery not likely to be available. Apply on E.C.16A before 25th February, 1956, to—

F. E. MILES, Clerk, Kent and Canterbury Executive Council. 11, Station-road, Maidstone.

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Miscellaneous

To non-professional posts the Notification of Vacancies Order 1952 applies.

Catholic Mission Hospital, Nigeria. 2 Doctors needed urgently, 1 for acute general hospital, 1 for leper colony.—For details apply: Secretary, DAMIEN MEDICO-MISSIONARY SOCIETY, 31, Fitzwilliam-square, Dublin.

Ship's Surgeon required for Cableship based overseas. Commission 18 months with option extension. Salary £1050, plus overseas allowance £132 p.a. Paid leave accrues, rate of 5 days per month served overseas.—Apply, in writing, Staff Manager, CABLE AND WIRELESS LTD., Mercury House, Theobalds-road, London W.C.1.

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Applicants for posts requiring testimonials copied or duplicated should communicate with MANTON SECRETARIAL SERVICE LTD., 98, Victoria-street, S.W.1 (Phone: VICtoria 0141), who are specialists in this kind of work.

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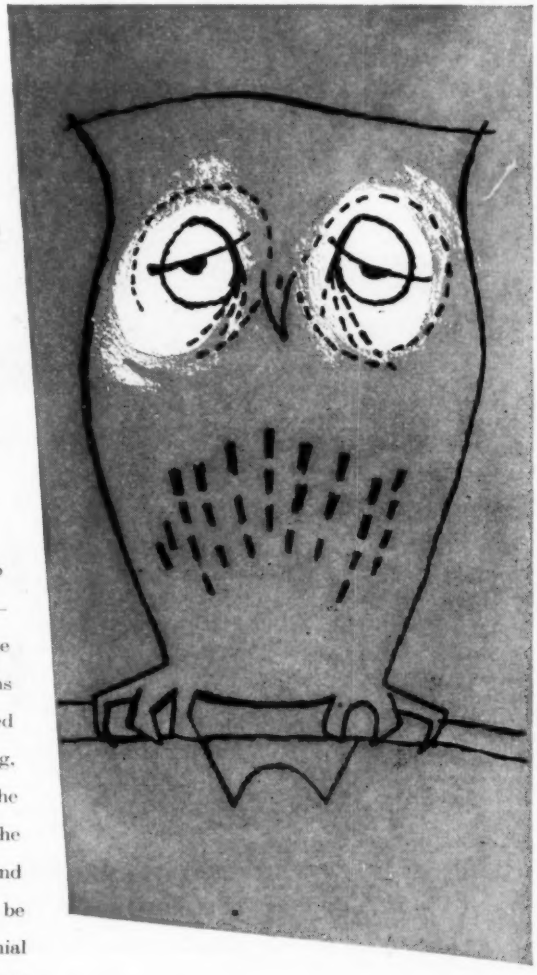

night cough

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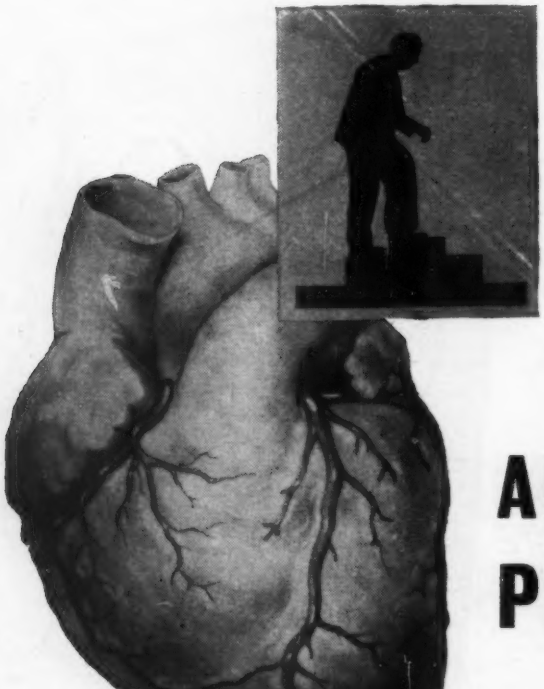

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